TrigonometryExercise4 for No.9124

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) & .2 = \mathrm{Cos}(15^{o}) \\ .3 = \mathrm{Tan}\left(\frac{5\pi}{12}\right) & .4 = \mathrm{Cos}\left(\frac{11\pi}{12}\right) \\ .5 = \mathrm{Sec}((\text{-}255)^{o}) & .6 = \mathrm{Cot}\left(-\frac{\pi}{12}\right) \\ .7 = \mathrm{Sin}((\text{-}345)^{o}) & .8 = \mathrm{Csc}\left(-\frac{5\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{2\,\mathrm{Tan}(22.5^{o})}{1 - \mathrm{Tan}(22.5^{o})^{2}} & .2 = \mathrm{Cos}(57^{o})\,\mathrm{Cos}(12^{o}) + \mathrm{Sin}(57^{o})\,\mathrm{Sin}(12^{o}) \\ .3 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^{2} & .4 = \frac{\mathrm{Tan}\left(\frac{5\pi}{36}\right) + \mathrm{Tan}\left(\frac{7\pi}{36}\right)}{1 - \mathrm{Tan}\left(\frac{5\pi}{36}\right)\mathrm{Tan}\left(\frac{7\pi}{36}\right)} \\ .5 = \frac{\mathrm{Tan}\left(\frac{7\pi}{18}\right) - \mathrm{Tan}\left(\frac{\pi}{18}\right)}{1 + \mathrm{Tan}\left(\frac{7\pi}{18}\right)\mathrm{Tan}\left(\frac{\pi}{18}\right)} & .6 = \mathrm{Cos}(10^{o})\,\mathrm{Cos}(20^{o}) - \mathrm{Sin}(10^{o})\,\mathrm{Sin}(20^{o}) \\ .7 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^{2} - 1 & .8 = \mathrm{Sin}(42^{o})\,\mathrm{Cos}(12^{o}) - \mathrm{Cos}(42^{o})\,\mathrm{Sin}(12^{o}) \\ .9 = 2\,\mathrm{Sin}(15^{o})\,\mathrm{Cos}(15^{o}) & .10 = \mathrm{Cos}(22.5^{o})^{2} - \mathrm{Sin}(22.5^{o})^{2} \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{5}{8}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{3}{7}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\,\alpha) & .8 = \mathrm{Tan}(2\,\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\,\pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{\text{-}1}{2}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{4}{9}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\,\alpha) & .8 = \mathrm{Tan}(2\,\beta) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(80^{o}) = 0.174), Question = \mathrm{Cos}(40^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(52^{o}) = 0.616), Question = \mathrm{Sin}(26^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.9197

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}(15^{o}) & .2 = \mathrm{Cos}\left(\frac{7\pi}{12}\right) \\ .3 = \mathrm{Tan}(75^{o}) & .4 = \mathrm{Sin}\left(-\frac{17\pi}{12}\right) \\ .5 = \mathrm{Csc}((-75)^{o}) & .6 = \mathrm{Tan}\left(-\frac{19\pi}{12}\right) \\ .7 = \mathrm{Cos}((-345)^{o}) & .8 = \mathrm{Cot}(345^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{2\,\mathrm{Tan}(15^{o})}{1 - \mathrm{Tan}(15^{o})^2} & .2 = \mathrm{Cos}(22.5^{o})^2 - \mathrm{Sin}(22.5^{o})^2 \\ .3 = \frac{\mathrm{Tan}(18^{o}) + \mathrm{Tan}(12^{o})}{1 - \mathrm{Tan}(18^{o})\,\mathrm{Tan}(12^{o})} & .4 = 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)\mathrm{Cos}\left(\frac{\pi}{8}\right) \\ .5 = \mathrm{Cos}(55^{o})\,\mathrm{Cos}(10^{o}) + \mathrm{Sin}(55^{o})\,\mathrm{Sin}(10^{o}) & .6 = 2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - 1 \\ .7 = 1 - 2\,\mathrm{Sin}(15^{o})^2 & .8 = \mathrm{Sin}(48^{o})\,\mathrm{Cos}(12^{o}) + \mathrm{Cos}(48^{o})\,\mathrm{Sin}(12^{o}) \\ .9 = \mathrm{Cos}\left(\frac{11\pi}{60}\right)\mathrm{Cos}\left(\frac{\pi}{15}\right) - \mathrm{Sin}\left(\frac{11\pi}{60}\right)\mathrm{Sin}\left(\frac{\pi}{15}\right) & .10 = \mathrm{Sin}\left(\frac{7\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{36}\right) - \mathrm{Cos}\left(\frac{7\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{36}\right) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{2}{3}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{1}{2}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\,\beta) & .8 = \mathrm{Tan}(2\,\alpha) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-1}{2}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{4}{7}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\,\beta) & .8 = \mathrm{Tan}(2\,\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(68^{o}) = 0.375), Question = \mathrm{Sin}(34^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(36^{o}) = 0.809), Question = \mathrm{Cos}(18^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.9252

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Sin}(75^{o}) \\ .3 = \mathrm{Tan}(105^{o}) & .4 = \mathrm{Cot}((-75)^{o}) \\ .5 = \mathrm{Csc}\left(\frac{17\pi}{12}\right) & .6 = \mathrm{Cos}\left(\frac{13\pi}{12}\right) \\ .7 = \mathrm{Tan}(285^{o}) & .8 = \mathrm{Sin}(345^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^2 & .2 = \mathrm{Cos}(60^{o})\,\mathrm{Cos}(15^{o}) + \mathrm{Sin}(60^{o})\,\mathrm{Sin}(15^{o}) \\ .3 = \mathrm{Cos}(10^{o})\,\mathrm{Cos}(80^{o}) - \mathrm{Sin}(10^{o})\,\mathrm{Sin}(80^{o}) & .4 = 2\,\mathrm{Cos}(15^{o})^2 - 1 \\ .5 = \frac{2\,\mathrm{Tan}(22.5^{o})}{1 - \mathrm{Tan}(22.5^{o})^2} & .6 = \mathrm{Cos}(22.5^{o})^2 - \mathrm{Sin}(22.5^{o})^2 \\ .7 = 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)\mathrm{Cos}\left(\frac{\pi}{8}\right) & .8 = \mathrm{Sin}\left(\frac{\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) + \mathrm{Cos}\left(\frac{\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) \\ .9 = \frac{\mathrm{Tan}(15^{o}) + \mathrm{Tan}(30^{o})}{1 - \mathrm{Tan}(15^{o})\,\mathrm{Tan}(30^{o})} & .10 = \mathrm{Sin}\left(\frac{4\pi}{9}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) - \mathrm{Cos}\left(\frac{4\pi}{9}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{5}{9}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-2}{3}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{\pi}{2}, B = \pi, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{1}{2}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{1}{3}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(58^{o}) = 0.530), Question = \mathrm{Sin}(29^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(14^{o}) = 0.970), Question = \mathrm{Cos}(7^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.9312

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}(105^{o}) & .2 = \mathrm{Sin}\left(\frac{5\pi}{12}\right) \\ .3 = \mathrm{Tan}(15^{o}) & .4 = \mathrm{Csc}((-75)^{o}) \\ .5 = \mathrm{Sin}\left(-\frac{17\pi}{12}\right) & .6 = \mathrm{Tan}((-165)^{o}) \\ .7 = \mathrm{Cos}\left(\frac{13\pi}{12}\right) & .8 = \mathrm{Cot}\left(-\frac{\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Cos}(50^{o})\,\mathrm{Cos}(20^{o}) + \mathrm{Sin}(50^{o})\,\mathrm{Sin}(20^{o}) & .2 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^{2}} \\ .3 = \frac{\mathrm{Tan}(35^{o}) + \mathrm{Tan}(25^{o})}{1 - \mathrm{Tan}(35^{o})\,\mathrm{Tan}(25^{o})} & .4 = 2\,\mathrm{Sin}(15^{o})\,\mathrm{Cos}(15^{o}) \\ .5 = \frac{\mathrm{Tan}\left(\frac{2\pi}{5}\right) - \mathrm{Tan}\left(\frac{\pi}{15}\right)}{1 + \mathrm{Tan}\left(\frac{2\pi}{5}\right)\mathrm{Tan}\left(\frac{\pi}{15}\right)} & .6 = \mathrm{Sin}\left(\frac{17\pi}{30}\right)\mathrm{Cos}\left(\frac{\pi}{15}\right) - \mathrm{Cos}\left(\frac{17\pi}{30}\right)\mathrm{Sin}\left(\frac{\pi}{15}\right) \\ .7 = \mathrm{Sin}(30^{o})\,\mathrm{Cos}(15^{o}) + \mathrm{Cos}(30^{o})\,\mathrm{Sin}(15^{o}) & .8 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^{2} \\ .9 = \mathrm{Cos}(22.5^{o})^{2} - \mathrm{Sin}(22.5^{o})^{2} & .10 = 2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^{2} - 1 \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{3}{5}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-1}{4}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{\pi}{2}, B = \pi, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-1}{2}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-1}{6}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(52^{o}) = 0.616), Question = \mathrm{Sin}(26^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(8^{o}) = 0.990), Question = \mathrm{Cos}(4^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.9397

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{5\pi}{12}\right) & .2 = \mathrm{Cos}(15^o) \\ .3 = \mathrm{Tan}\left(\frac{7\pi}{12}\right) & .4 = \mathrm{Sin}(195^o) \\ .5 = \mathrm{Tan}\left(\frac{17\pi}{12}\right) & .6 = \mathrm{Csc}\left(-\frac{19\pi}{12}\right) \\ .7 = \mathrm{Cot}((-195)^o) & .8 = \mathrm{Sec}\left(-\frac{23\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - 1 & .2 = \mathrm{Sin}(110^o)\,\mathrm{Cos}(20^o) - \mathrm{Cos}(110^o)\,\mathrm{Sin}(20^o) \\ .3 = \mathrm{Cos}\left(\frac{17\pi}{36}\right)\mathrm{Cos}\left(\frac{5\pi}{36}\right) + \mathrm{Sin}\left(\frac{17\pi}{36}\right)\mathrm{Sin}\left(\frac{5\pi}{36}\right) & .4 = 1 - 2\,\mathrm{Sin}(22.5^o)^2 \\ .5 = \frac{2\,\mathrm{Tan}(15^o)}{1 - \mathrm{Tan}(15^o)^2} & .6 = \mathrm{Cos}(15^o)^2 - \mathrm{Sin}(15^o)^2 \\ .7 = \frac{\mathrm{Tan}(57^o) - \mathrm{Tan}(12^o)}{1 + \mathrm{Tan}(57^o)\,\mathrm{Tan}(12^o)} & .8 = \mathrm{Sin}(30^o)\,\mathrm{Cos}(15^o) + \mathrm{Cos}(30^o)\,\mathrm{Sin}(15^o) \\ .9 = \frac{\mathrm{Tan}\left(\frac{5\pi}{36}\right) + \mathrm{Tan}\left(\frac{\pi}{36}\right)}{1 - \mathrm{Tan}\left(\frac{5\pi}{36}\right)\mathrm{Tan}\left(\frac{\pi}{36}\right)} & .10 = 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)\mathrm{Cos}\left(\frac{\pi}{8}\right) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{1}{2}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{5}{9}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-2}{3}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-5}{6}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(30^o) = 0.866), Question = \mathrm{Cos}(15^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(76^o) = 0.242), Question = \mathrm{Sin}(38^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.9449

$$No1 = \begin{bmatrix} .1 = \text{Sin}(105^{\circ}) & .2 = \text{Cos}\left(\frac{\pi}{12}\right) \\ .3 = \text{Tan}\left(\frac{5\pi}{12}\right) & .4 = \text{Cos}((-105)^{\circ}) \\ .5 = \text{Sec}\left(-\frac{5\pi}{12}\right) & .6 = \text{Tan}(195^{\circ}) \\ .7 = \text{Sin}\left(-\frac{19\pi}{12}\right) & .8 = \text{Csc}\left(-\frac{\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \text{Sin}\left(\frac{\pi}{15}\right)\text{Cos}\left(\frac{\pi}{10}\right) + \text{Cos}\left(\frac{\pi}{15}\right)\text{Sin}\left(\frac{\pi}{10}\right) & .2 = \text{Sin}(57^{\circ})\,\text{Cos}(12^{\circ}) - \text{Cos}(57^{\circ})\,\text{Sin}(12^{\circ}) \\ .3 = \text{Cos}(40^{\circ})\,\text{Cos}(10^{\circ}) + \text{Sin}(40^{\circ})\,\text{Sin}(10^{\circ}) & .4 = 2\,\text{Cos}(15^{\circ})^2 - 1 \\ .5 = 2\,\text{Sin}\left(\frac{\pi}{12}\right)\text{Cos}\left(\frac{\pi}{12}\right) & .6 = \dfrac{\text{Tan}\left(\frac{\pi}{12}\right) + \text{Tan}\left(\frac{\pi}{6}\right)}{1 - \text{Tan}\left(\frac{\pi}{12}\right)\text{Tan}\left(\frac{\pi}{6}\right)} \\ .7 = 1 - 2\,\text{Sin}(22.5^{\circ})^2 & .8 = \text{Cos}\left(\frac{\pi}{8}\right)^2 - \text{Sin}\left(\frac{\pi}{8}\right)^2 \\ .9 = \dfrac{2\,\text{Tan}\left(\frac{\pi}{12}\right)}{1 - \text{Tan}\left(\frac{\pi}{12}\right)^2} & .10 = \text{Cos}(75^{\circ})\,\text{Cos}(15^{\circ}) - \text{Sin}(75^{\circ})\,\text{Sin}(15^{\circ}) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\text{Sin}(\alpha) = \frac{1}{6}\right), Cond2 = \left(\text{Cos}(\beta) = \frac{3}{7}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \text{Cos}(\alpha) & .2 = \text{Sin}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\beta - \alpha) \\ .5 = \text{Cos}(\alpha - \beta) & .6 = \text{Tan}(\alpha + \beta) \\ .7 = \text{Cos}(2\beta) & .8 = \text{Tan}(2\alpha) \end{bmatrix}\end{bmatrix} \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\text{Sin}(\alpha) = \frac{-5}{9}\right), Cond2 = \left(\text{Cos}(\beta) = \frac{-2}{3}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \text{Cos}(\alpha) & .2 = \text{Sin}(\beta) \\ .3 = \text{Tan}(\alpha) & .4 = \text{Sin}(\beta - \alpha) \\ .5 = \text{Cos}(\alpha + \beta) & .6 = \text{Tan}(\alpha - \beta) \\ .7 = \text{Cos}(2\beta) & .8 = \text{Tan}(2\alpha) \end{bmatrix}\end{bmatrix} \end{bmatrix}$$

$$No5 = [Cond = (\text{Cos}(40^{\circ}) = 0.766), Question = \text{Sin}(20^{\circ})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\text{Cos}(76^{\circ}) = 0.242), Question = \text{Cos}(38^{\circ})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.9562

$$No1 = \begin{bmatrix} .1 = \operatorname{Cos}\left(\frac{5\pi}{12}\right) & .2 = \operatorname{Sin}(15^{o}) \\ .3 = \operatorname{Tan}\left(\frac{7\pi}{12}\right) & .4 = \operatorname{Sin}((-165)^{o}) \\ .5 = \operatorname{Csc}\left(-\frac{17\pi}{12}\right) & .6 = \operatorname{Sec}((-105)^{o}) \\ .7 = \operatorname{Cos}\left(-\frac{23\pi}{12}\right) & .8 = \operatorname{Tan}\left(-\frac{19\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \operatorname{Sin}\left(\frac{5\pi}{18}\right)\operatorname{Cos}\left(\frac{\pi}{9}\right) - \operatorname{Cos}\left(\frac{5\pi}{18}\right)\operatorname{Sin}\left(\frac{\pi}{9}\right) & .2 = 2\operatorname{Cos}\left(\frac{\pi}{8}\right)^{2} - 1 \\ .3 = 2\operatorname{Sin}(22.5^{o})\operatorname{Cos}(22.5^{o}) & .4 = \dfrac{\operatorname{Tan}\left(\frac{4\pi}{9}\right) - \operatorname{Tan}\left(\frac{\pi}{9}\right)}{1 + \operatorname{Tan}\left(\frac{4\pi}{9}\right)\operatorname{Tan}\left(\frac{\pi}{9}\right)} \\ .5 = \operatorname{Cos}(100^{o})\operatorname{Cos}(10^{o}) + \operatorname{Sin}(100^{o})\operatorname{Sin}(10^{o}) & .6 = \operatorname{Cos}(15^{o})^{2} - \operatorname{Sin}(15^{o})^{2} \\ .7 = \dfrac{\operatorname{Tan}(5^{o}) + \operatorname{Tan}(25^{o})}{1 - \operatorname{Tan}(5^{o})\operatorname{Tan}(25^{o})} & .8 = 1 - 2\operatorname{Sin}\left(\frac{\pi}{12}\right)^{2} \\ .9 = \operatorname{Cos}\left(\frac{\pi}{6}\right)\operatorname{Cos}\left(\frac{\pi}{12}\right) - \operatorname{Sin}\left(\frac{\pi}{6}\right)\operatorname{Sin}\left(\frac{\pi}{12}\right) & .10 = \dfrac{2\operatorname{Tan}(15^{o})}{1 - \operatorname{Tan}(15^{o})^{2}} \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\operatorname{Cos}(\alpha) = \frac{1}{3}\right), Cond2 = \left(\operatorname{Sin}(\beta) = \frac{-1}{2}\right)\right] \\ \left[\left[\begin{matrix} .1 = \operatorname{Sin}(\alpha) & .2 = \operatorname{Cos}(\beta) \\ .3 = \operatorname{Tan}(\alpha) & .4 = \operatorname{Sin}(\alpha + \beta) \\ .5 = \operatorname{Cos}(\beta - \alpha) & .6 = \operatorname{Tan}(\alpha - \beta) \\ .7 = \operatorname{Cos}(2\alpha) & .8 = \operatorname{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{\pi}{2}, B = \pi, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\operatorname{Sin}(\alpha) = \frac{3}{8}\right), Cond2 = \left(\operatorname{Cos}(\beta) = \frac{-2}{5}\right)\right] \\ \left[\left[\begin{matrix} .1 = \operatorname{Cos}(\alpha) & .2 = \operatorname{Sin}(\beta) \\ .3 = \operatorname{Tan}(\beta) & .4 = \operatorname{Sin}(\alpha + \beta) \\ .5 = \operatorname{Cos}(\alpha - \beta) & .6 = \operatorname{Tan}(\beta - \alpha) \\ .7 = \operatorname{Sin}(2\alpha) & .8 = \operatorname{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\operatorname{Cos}(80^{o}) = 0.174), Question = \operatorname{Cos}(40^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\operatorname{Cos}(6^{o}) = 0.995), Question = \operatorname{Sin}(3^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.9721

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Sin}(105^o) \\ .3 = \mathrm{Tan}(75^o) & .4 = \mathrm{Csc}\left(\frac{23\pi}{12}\right) \\ .5 = \mathrm{Sec}(255^o) & .6 = \mathrm{Cot}\left(-\frac{17\pi}{12}\right) \\ .7 = \mathrm{Tan}((-75)^o) & .8 = \mathrm{Sin}(285^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\mathrm{Sin}(22.5^o)\,\mathrm{Cos}(22.5^o) & .2 = 2\,\mathrm{Cos}(15^o)^2 - 1 \\ .3 = \mathrm{Sin}(100^o)\,\mathrm{Cos}(10^o) - \mathrm{Cos}(100^o)\,\mathrm{Sin}(10^o) & .4 = \frac{\mathrm{Tan}(85^o) - \mathrm{Tan}(25^o)}{1 + \mathrm{Tan}(85^o)\,\mathrm{Tan}(25^o)} \\ .5 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^2 & .6 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^2} \\ .7 = \mathrm{Cos}\left(\frac{\pi}{10}\right)\mathrm{Cos}\left(\frac{\pi}{15}\right) - \mathrm{Sin}\left(\frac{\pi}{10}\right)\mathrm{Sin}\left(\frac{\pi}{15}\right) & .8 = \mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{12}\right)^2 \\ .9 = \mathrm{Sin}(70^o)\,\mathrm{Cos}(20^o) + \mathrm{Cos}(70^o)\,\mathrm{Sin}(20^o) & .10 = \frac{\mathrm{Tan}\left(\frac{\pi}{18}\right) + \mathrm{Tan}\left(\frac{7\pi}{36}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{18}\right)\mathrm{Tan}\left(\frac{7\pi}{36}\right)} \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ [[P\ V\ S\ S]] \\ \& \\ [[M\ a\ t\ h\ @\ M\ U\ T]] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{3}{8}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-1}{3}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{\pi}{2}, B = \pi, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{4}{7}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{4}{9}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(38^o) = 0.788), Question = \mathrm{Cos}(19^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(14^o) = 0.970), Question = \mathrm{Sin}(7^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.9789

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}(75^{o}) & .2 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{\pi}{12}\right) & .4 = \mathrm{Csc}\left(\frac{11\pi}{12}\right) \\ .5 = \mathrm{Sec}((-105)^{o}) & .6 = \mathrm{Cot}\left(-\frac{17\pi}{12}\right) \\ .7 = \mathrm{Sin}((-195)^{o}) & .8 = \mathrm{Tan}((-75)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\mathrm{Cos}(15^{o})^{2} - 1 & .2 = \mathrm{Cos}(80^{o})\,\mathrm{Cos}(20^{o}) + \mathrm{Sin}(80^{o})\,\mathrm{Sin}(20^{o}) \\ .3 = 2\,\mathrm{Sin}(22.5^{o})\,\mathrm{Cos}(22.5^{o}) & .4 = \dfrac{2\,\mathrm{Tan}(15^{o})}{1 - \mathrm{Tan}(15^{o})^{2}} \\ .5 = \dfrac{\mathrm{Tan}\left(\frac{\pi}{18}\right) + \mathrm{Tan}\left(\frac{\pi}{9}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{18}\right)\mathrm{Tan}\left(\frac{\pi}{9}\right)} & .6 = \mathrm{Sin}(48^{o})\,\mathrm{Cos}(12^{o}) + \mathrm{Cos}(48^{o})\,\mathrm{Sin}(12^{o}) \\ .7 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^{2} & .8 = \mathrm{Sin}(42^{o})\,\mathrm{Cos}(12^{o}) - \mathrm{Cos}(42^{o})\,\mathrm{Sin}(12^{o}) \\ .9 = \mathrm{Cos}\left(\frac{\pi}{8}\right)^{2} - \mathrm{Sin}\left(\frac{\pi}{8}\right)^{2} & .10 = \mathrm{Cos}\left(\frac{\pi}{9}\right)\mathrm{Cos}\left(\frac{7\pi}{18}\right) - \mathrm{Sin}\left(\frac{\pi}{9}\right)\mathrm{Sin}\left(\frac{7\pi}{18}\right) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{1}{3}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{2}{5}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-1}{5}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{4}{9}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(62^{o}) = 0.469), Question = \mathrm{Cos}(31^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(18^{o}) = 0.951), Question = \mathrm{Sin}(9^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.9795

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Sin}(75^{o}) \\ .3 = \mathrm{Tan}\left(\frac{7\pi}{12}\right) & .4 = \mathrm{Tan}((-105)^{o}) \\ .5 = \mathrm{Csc}\left(\frac{23\pi}{12}\right) & .6 = \mathrm{Sec}\left(-\frac{5\pi}{12}\right) \\ .7 = \mathrm{Cot}(285^{o}) & .8 = \mathrm{Cos}(195^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^2 & .2 = \mathrm{Cos}(22.5^{o})^2 - \mathrm{Sin}(22.5^{o})^2 \\ .3 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - 1 & .4 = \frac{\mathrm{Tan}(85^{o}) - \mathrm{Tan}(25^{o})}{1 + \mathrm{Tan}(85^{o})\,\mathrm{Tan}(25^{o})} \\ .5 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^2} & .6 = \frac{\mathrm{Tan}\left(\frac{\pi}{12}\right) + \mathrm{Tan}\left(\frac{\pi}{6}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)\mathrm{Tan}\left(\frac{\pi}{6}\right)} \\ .7 = \mathrm{Sin}(35^{o})\,\mathrm{Cos}(5^{o}) - \mathrm{Cos}(35^{o})\,\mathrm{Sin}(5^{o}) & .8 = \mathrm{Cos}(78^{o})\,\mathrm{Cos}(12^{o}) - \mathrm{Sin}(78^{o})\,\mathrm{Sin}(12^{o}) \\ .9 = \mathrm{Cos}\left(\frac{7\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) + \mathrm{Sin}\left(\frac{7\pi}{12}\right)\mathrm{Sin}\left(\frac{\pi}{12}\right) & .10 = 2\,\mathrm{Sin}(15^{o})\,\mathrm{Cos}(15^{o}) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{5}{7}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-1}{3}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-5}{6}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-4}{5}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(64^{o}) = 0.438), Question = \mathrm{Cos}(32^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(34^{o}) = 0.829), Question = \mathrm{Sin}(17^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.9839

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{5\pi}{12}\right) & .2 = \mathrm{Cos}(15^{o}) \\ .3 = \mathrm{Tan}(105^{o}) & .4 = \mathrm{Sin}\left(\frac{19\pi}{12}\right) \\ .5 = \mathrm{Sec}((-285)^{o}) & .6 = \mathrm{Cos}((-195)^{o}) \\ .7 = \mathrm{Tan}\left(-\frac{11\pi}{12}\right) & .8 = \mathrm{Csc}((-105)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \dfrac{\mathrm{Tan}\left(\frac{7\pi}{30}\right) - \mathrm{Tan}\left(\frac{\pi}{15}\right)}{1 + \mathrm{Tan}\left(\frac{7\pi}{30}\right)\mathrm{Tan}\left(\frac{\pi}{15}\right)} & .2 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) \\ .3 = \mathrm{Sin}\left(\frac{\pi}{3}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) - \mathrm{Cos}\left(\frac{\pi}{3}\right)\mathrm{Sin}\left(\frac{\pi}{12}\right) & .4 = 2\,\mathrm{Cos}(22.5^{o})^{2} - 1 \\ .5 = \mathrm{Cos}(85^{o})\,\mathrm{Cos}(25^{o}) + \mathrm{Sin}(85^{o})\,\mathrm{Sin}(25^{o}) & .6 = \dfrac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^{2}} \\ .7 = \dfrac{\mathrm{Tan}(35^{o}) + \mathrm{Tan}(10^{o})}{1 - \mathrm{Tan}(35^{o})\,\mathrm{Tan}(10^{o})} & .8 = \mathrm{Cos}(15^{o})^{2} - \mathrm{Sin}(15^{o})^{2} \\ .9 = \mathrm{Sin}\left(\frac{\pi}{15}\right)\mathrm{Cos}\left(\frac{13\pi}{30}\right) + \mathrm{Cos}\left(\frac{\pi}{15}\right)\mathrm{Sin}\left(\frac{13\pi}{30}\right) & .10 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^{2} \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{2}{7}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{2}{5}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-1}{5}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-1}{2}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\mathrm{Cos}(86^{o}) = 0.070),\ Question = \mathrm{Cos}(43^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\mathrm{Cos}(16^{o}) = 0.961),\ Question = \mathrm{Sin}(8^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.9843

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Cos}(105^{o}) \\ .3 = \mathrm{Tan}(75^{o}) & .4 = \mathrm{Tan}((-255)^{o}) \\ .5 = \mathrm{Sec}\left(\frac{13\pi}{12}\right) & .6 = \mathrm{Sin}\left(-\frac{7\pi}{12}\right) \\ .7 = \mathrm{Csc}(345^{o}) & .8 = \mathrm{Cot}((-195)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{\mathrm{Tan}(5^{o}) + \mathrm{Tan}(25^{o})}{1 - \mathrm{Tan}(5^{o})\,\mathrm{Tan}(25^{o})} & .2 = \mathrm{Sin}\left(\frac{19\pi}{60}\right)\mathrm{Cos}\left(\frac{\pi}{15}\right) - \mathrm{Cos}\left(\frac{19\pi}{60}\right)\mathrm{Sin}\left(\frac{\pi}{15}\right) \\ .3 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) & .4 = 1 - 2\,\mathrm{Sin}(15^{o})^2 \\ .5 = \mathrm{Sin}(48^{o})\,\mathrm{Cos}(12^{o}) + \mathrm{Cos}(48^{o})\,\mathrm{Sin}(12^{o}) & .6 = \mathrm{Cos}(22.5^{o})^2 - \mathrm{Sin}(22.5^{o})^2 \\ .7 = \mathrm{Cos}\left(\frac{7\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) - \mathrm{Sin}\left(\frac{7\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .8 = \mathrm{Cos}(85^{o})\,\mathrm{Cos}(25^{o}) + \mathrm{Sin}(85^{o})\,\mathrm{Sin}(25^{o}) \\ .9 = \frac{2\,\mathrm{Tan}(22.5^{o})}{1 - \mathrm{Tan}(22.5^{o})^2} & .10 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - 1 \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{4}{7}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-2}{3}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-3}{7}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{3}{8}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(30^{o}) = 0.866), Question = \mathrm{Sin}(15^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(86^{o}) = 0.070), Question = \mathrm{Cos}(43^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.9854

$$No1=\begin{bmatrix} .1=\mathrm{Sin}\left(\frac{5\pi}{12}\right) & .2=\mathrm{Cos}(15^{o}) \\ .3=\mathrm{Tan}\left(\frac{7\pi}{12}\right) & .4=\mathrm{Csc}\left(-\frac{13\pi}{12}\right) \\ .5=\mathrm{Sec}((-345)^{o}) & .6=\mathrm{Tan}\left(\frac{19\pi}{12}\right) \\ .7=\mathrm{Cot}(195^{o}) & .8=\mathrm{Cos}\left(-\frac{7\pi}{12}\right) \end{bmatrix}, No2=\begin{bmatrix} .1=\frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1-\mathrm{Tan}\left(\frac{\pi}{12}\right)^{2}} & .2=2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^{2}-1 \\ .3=1-2\,\mathrm{Sin}(22.5^{o})^{2} & .4=\mathrm{Cos}\left(\frac{\pi}{8}\right)^{2}-\mathrm{Sin}\left(\frac{\pi}{8}\right)^{2} \\ .5=\mathrm{Cos}\left(\frac{4\pi}{9}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right)+\mathrm{Sin}\left(\frac{4\pi}{9}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) & .6=\frac{\mathrm{Tan}(35^{o})+\mathrm{Tan}(25^{o})}{1-\mathrm{Tan}(35^{o})\,\mathrm{Tan}(25^{o})} \\ .7=\mathrm{Sin}\left(\frac{5\pi}{9}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right)-\mathrm{Cos}\left(\frac{5\pi}{9}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .8=\frac{\mathrm{Tan}(35^{o})-\mathrm{Tan}(5^{o})}{1+\mathrm{Tan}(35^{o})\,\mathrm{Tan}(5^{o})} \\ .9=\mathrm{Sin}(78^{o})\,\mathrm{Cos}(12^{o})+\mathrm{Cos}(78^{o})\,\mathrm{Sin}(12^{o}) & .10=2\,\mathrm{Sin}(15^{o})\,\mathrm{Cos}(15^{o}) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3=\begin{bmatrix} \left[A=0, B=\frac{\pi}{2}, C=\frac{\pi}{2}, \mathrm{D}=\pi\right] \\ \left[Cond1=\left(\mathrm{Cos}(\alpha)=\frac{1}{2}\right), Cond2=\left(\mathrm{Sin}(\beta)=\frac{1}{3}\right)\right] \\ \left[\begin{bmatrix} .1=\mathrm{Sin}(\alpha) & .2=\mathrm{Cos}(\beta) \\ .3=\mathrm{Tan}(\beta) & .4=\mathrm{Sin}(\beta-\alpha) \\ .5=\mathrm{Cos}(\alpha-\beta) & .6=\mathrm{Tan}(\alpha+\beta) \\ .7=\mathrm{Cos}(2\beta) & .8=\mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}, \quad , No4=\begin{bmatrix} \left[A=\pi, B=\frac{3\pi}{2}, C=\frac{3\pi}{2}, \mathrm{D}=2\pi\right] \\ \left[Cond1=\left(\mathrm{Sin}(\alpha)=\frac{-2}{7}\right), Cond2=\left(\mathrm{Cos}(\beta)=\frac{1}{4}\right)\right] \\ \left[\begin{bmatrix} .1=\mathrm{Cos}(\alpha) & .2=\mathrm{Sin}(\beta) \\ .3=\mathrm{Tan}(\beta) & .4=\mathrm{Sin}(\alpha+\beta) \\ .5=\mathrm{Cos}(\beta-\alpha) & .6=\mathrm{Tan}(\alpha-\beta) \\ .7=\mathrm{Cos}(2\beta) & .8=\mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5=[Cond=(\mathrm{Cos}(20^{o})=0.940), Question=\mathrm{Cos}(10^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6=[Cond=(\mathrm{Cos}(86^{o})=0.070), Question=\mathrm{Sin}(43^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.9862

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}(15^o) & .2 = \mathrm{Cos}\left(\frac{7\pi}{12}\right) \\ .3 = \mathrm{Tan}(75^o) & .4 = \mathrm{Sec}\left(-\frac{19\pi}{12}\right) \\ .5 = \mathrm{Cot}((-15)^o) & .6 = \mathrm{Cos}(195^o) \\ .7 = \mathrm{Csc}\left(\frac{19\pi}{12}\right) & .8 = \mathrm{Tan}\left(-\frac{13\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{\mathrm{Tan}\left(\frac{\pi}{18}\right) + \mathrm{Tan}\left(\frac{\pi}{9}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{18}\right)\mathrm{Tan}\left(\frac{\pi}{9}\right)} & .2 = \mathrm{Cos}\left(\frac{11\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) + \mathrm{Sin}\left(\frac{11\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) \\ .3 = \mathrm{Cos}(22.5^o)^2 - \mathrm{Sin}(22.5^o)^2 & .4 = \frac{\mathrm{Tan}(50^o) - \mathrm{Tan}(20^o)}{1 + \mathrm{Tan}(50^o)\mathrm{Tan}(20^o)} \\ .5 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^2 & .6 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - 1 \\ .7 = \mathrm{Sin}(72^o)\mathrm{Cos}(12^o) - \mathrm{Cos}(72^o)\mathrm{Sin}(12^o) & .8 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^2} \\ .9 = \mathrm{Sin}(30^o)\mathrm{Cos}(15^o) + \mathrm{Cos}(30^o)\mathrm{Sin}(15^o) & .10 = 2\,\mathrm{Sin}(15^o)\mathrm{Cos}(15^o) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{1}{4}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{3}{5}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-1}{6}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{5}{8}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(34^o) = 0.829), Question = \mathrm{Cos}(17^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(80^o) = 0.174), Question = \mathrm{Sin}(40^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.10278

$$No1 = \begin{bmatrix} .1 = \text{Cos}(105^o) & .2 = \text{Sin}\left(\frac{\pi}{12}\right) \\ .3 = \text{Tan}\left(\frac{5\pi}{12}\right) & .4 = \text{Cot}\left(\frac{11\pi}{12}\right) \\ .5 = \text{Sin}((-165)^o) & .6 = \text{Csc}\left(-\frac{\pi}{12}\right) \\ .7 = \text{Sec}(255^o) & .8 = \text{Cos}\left(-\frac{23\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\text{Cos}\left(\frac{\pi}{12}\right)^2 - 1 & .2 = \text{Cos}\left(\frac{\pi}{8}\right)^2 - \text{Sin}\left(\frac{\pi}{8}\right)^2 \\ .3 = \dfrac{2\,\text{Tan}\left(\frac{\pi}{8}\right)}{1 - \text{Tan}\left(\frac{\pi}{8}\right)^2} & .4 = \dfrac{\text{Tan}\left(\frac{7\pi}{18}\right) - \text{Tan}\left(\frac{\pi}{18}\right)}{1 + \text{Tan}\left(\frac{7\pi}{18}\right)\text{Tan}\left(\frac{\pi}{18}\right)} \\ .5 = \text{Sin}\left(\frac{\pi}{15}\right)\text{Cos}\left(\frac{\pi}{10}\right) + \text{Cos}\left(\frac{\pi}{15}\right)\text{Sin}\left(\frac{\pi}{10}\right) & .6 = \text{Cos}(40^o)\,\text{Cos}(10^o) + \text{Sin}(40^o)\,\text{Sin}(10^o) \\ .7 = \text{Cos}(35^o)\,\text{Cos}(10^o) - \text{Sin}(35^o)\,\text{Sin}(10^o) & .8 = \dfrac{\text{Tan}\left(\frac{5\pi}{18}\right) + \text{Tan}\left(\frac{\pi}{18}\right)}{1 - \text{Tan}\left(\frac{5\pi}{18}\right)\text{Tan}\left(\frac{\pi}{18}\right)} \\ .9 = 1 - 2\,\text{Sin}(15^o)^2 & .10 = 2\,\text{Sin}(22.5^o)\,\text{Cos}(22.5^o) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\text{Sin}(\alpha) = \frac{3}{8}\right), Cond2 = \left(\text{Cos}(\beta) = \frac{1}{6}\right)\right] \\ \left[\left[\begin{matrix} .1 = \text{Cos}(\alpha) & .2 = \text{Sin}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\alpha + \beta) \\ .5 = \text{Cos}(\beta - \alpha) & .6 = \text{Tan}(\alpha - \beta) \\ .7 = \text{Sin}(2\,\alpha) & .8 = \text{Tan}(2\,\beta) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{\pi}{2}, B = \pi, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\text{Sin}(\alpha) = \frac{3}{8}\right), Cond2 = \left(\text{Cos}(\beta) = \frac{-3}{5}\right)\right] \\ \left[\left[\begin{matrix} .1 = \text{Cos}(\alpha) & .2 = \text{Sin}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\alpha - \beta) \\ .5 = \text{Cos}(\beta - \alpha) & .6 = \text{Tan}(\alpha + \beta) \\ .7 = \text{Sin}(2\,\alpha) & .8 = \text{Tan}(2\,\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\text{Cos}(84^o) = 0.105),\ Question = \text{Sin}(42^o)\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\text{Cos}(64^o) = 0.438),\ Question = \text{Cos}(32^o)\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.10361

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}(15^{o}) & .2 = \mathrm{Cos}\left(\frac{5\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{7\pi}{12}\right) & .4 = \mathrm{Sin}((-15)^{o}) \\ .5 = \mathrm{Sec}\left(-\frac{23\pi}{12}\right) & .6 = \mathrm{Csc}\left(\frac{19\pi}{12}\right) \\ .7 = \mathrm{Cos}((-105)^{o}) & .8 = \mathrm{Cot}((-285)^{o}) \end{bmatrix},$$

$$No2 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{8}\right)^2 & .2 = \frac{\mathrm{Tan}(35^{o}) + \mathrm{Tan}(10^{o})}{1 - \mathrm{Tan}(35^{o})\,\mathrm{Tan}(10^{o})} \\ .3 = \mathrm{Sin}\left(\frac{5\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) - \mathrm{Cos}\left(\frac{5\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) & .4 = 2\,\mathrm{Sin}(22.5^{o})\,\mathrm{Cos}(22.5^{o}) \\ .5 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^2} & .6 = \mathrm{Cos}(10^{o})\,\mathrm{Cos}(80^{o}) - \mathrm{Sin}(10^{o})\,\mathrm{Sin}(80^{o}) \\ .7 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^2 & .8 = 2\,\mathrm{Cos}(15^{o})^2 - 1 \\ .9 = \mathrm{Cos}\left(\frac{7\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) + \mathrm{Sin}\left(\frac{7\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .10 = \mathrm{Sin}\left(\frac{\pi}{9}\right)\mathrm{Cos}\left(\frac{2\pi}{9}\right) + \mathrm{Cos}\left(\frac{\pi}{9}\right)\mathrm{Sin}\left(\frac{2\pi}{9}\right) \end{bmatrix},$$

$$, \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{4}{7}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-2}{5}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix},$$

$$, No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \pi, \mathrm{D} = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-1}{3}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-2}{3}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(50^{o}) = 0.643), Question = \mathrm{Sin}(25^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(28^{o}) = 0.883), Question = \mathrm{Cos}(14^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.10532

$$No1 = \begin{bmatrix} .1 = \text{Sin}(75^{o}) & .2 = \text{Cos}\left(\frac{7\pi}{12}\right) \\ .3 = \text{Tan}(15^{o}) & .4 = \text{Sec}\left(-\frac{19\pi}{12}\right) \\ .5 = \text{Cos}((-255)^{o}) & .6 = \text{Cot}\left(\frac{19\pi}{12}\right) \\ .7 = \text{Sin}((-105)^{o}) & .8 = \text{Csc}\left(\frac{23\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\text{Cos}\left(\frac{\pi}{12}\right)^2 - 1 & .2 = 2\,\text{Sin}(22.5^{o})\,\text{Cos}(22.5^{o}) \\ .3 = \frac{\text{Tan}(55^{o}) - \text{Tan}(10^{o})}{1 + \text{Tan}(55^{o})\,\text{Tan}(10^{o})} & .4 = \text{Cos}\left(\frac{17\pi}{36}\right)\text{Cos}\left(\frac{5\pi}{36}\right) + \text{Sin}\left(\frac{17\pi}{36}\right)\text{Sin}\left(\frac{5\pi}{36}\right) \\ .5 = \frac{\text{Tan}(12^{o}) + \text{Tan}(48^{o})}{1 - \text{Tan}(12^{o})\,\text{Tan}(48^{o})} & .6 = \frac{2\,\text{Tan}\left(\frac{\pi}{12}\right)}{1 - \text{Tan}\left(\frac{\pi}{12}\right)^2} \\ .7 = \text{Sin}\left(\frac{5\pi}{18}\right)\text{Cos}\left(\frac{\pi}{9}\right) - \text{Cos}\left(\frac{5\pi}{18}\right)\text{Sin}\left(\frac{\pi}{9}\right) & .8 = \text{Cos}(20^{o})\,\text{Cos}(25^{o}) - \text{Sin}(20^{o})\,\text{Sin}(25^{o}) \\ .9 = \text{Cos}(15^{o})^2 - \text{Sin}(15^{o})^2 & .10 = 1 - 2\,\text{Sin}\left(\frac{\pi}{8}\right)^2 \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\text{Cos}(\alpha) = \frac{1}{3}\right), Cond2 = \left(\text{Sin}(\beta) = \frac{1}{6}\right)\right] \\ \left[\begin{bmatrix} .1 = \text{Sin}(\alpha) & .2 = \text{Cos}(\beta) \\ .3 = \text{Tan}(\alpha) & .4 = \text{Sin}(\beta - \alpha) \\ .5 = \text{Cos}(\alpha + \beta) & .6 = \text{Tan}(\alpha - \beta) \\ .7 = \text{Sin}(2\beta) & .8 = \text{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\text{Cos}(\alpha) = \frac{-5}{8}\right), Cond2 = \left(\text{Sin}(\beta) = \frac{-1}{2}\right)\right] \\ \left[\begin{bmatrix} .1 = \text{Sin}(\alpha) & .2 = \text{Cos}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\alpha - \beta) \\ .5 = \text{Cos}(\beta - \alpha) & .6 = \text{Tan}(\alpha + \beta) \\ .7 = \text{Sin}(2\beta) & .8 = \text{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\text{Cos}(56^{o}) = 0.559), Question = \text{Cos}(28^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\text{Cos}(78^{o}) = 0.208), Question = \text{Sin}(39^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.10688

$$No1 = \begin{bmatrix} .1 = \text{Cos}(105^{o}) & .2 = \text{Sin}\left(\frac{\pi}{12}\right) \\ .3 = \text{Tan}\left(\frac{5\pi}{12}\right) & .4 = \text{Tan}\left(-\frac{23\pi}{12}\right) \\ .5 = \text{Sin}((-75)^{o}) & .6 = \text{Cot}\left(-\frac{13\pi}{12}\right) \\ .7 = \text{Cos}(255^{o}) & .8 = \text{Csc}((-285)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \dfrac{\text{Tan}\left(\frac{\pi}{3}\right) - \text{Tan}\left(\frac{\pi}{12}\right)}{1 + \text{Tan}\left(\frac{\pi}{3}\right)\text{Tan}\left(\frac{\pi}{12}\right)} & .2 = \text{Sin}\left(\frac{17\pi}{30}\right)\text{Cos}\left(\frac{\pi}{15}\right) - \text{Cos}\left(\frac{17\pi}{30}\right)\text{Sin}\left(\frac{\pi}{15}\right) \\ .3 = \text{Cos}\left(\frac{7\pi}{36}\right)\text{Cos}\left(\frac{5\pi}{36}\right) - \text{Sin}\left(\frac{7\pi}{36}\right)\text{Sin}\left(\frac{5\pi}{36}\right) & .4 = 1 - 2\,\text{Sin}\left(\frac{\pi}{12}\right)^{2} \\ .5 = \text{Cos}\left(\frac{\pi}{8}\right)^{2} - \text{Sin}\left(\frac{\pi}{8}\right)^{2} & .6 = \text{Cos}(42^{o})\,\text{Cos}(12^{o}) + \text{Sin}(42^{o})\,\text{Sin}(12^{o}) \\ .7 = 2\,\text{Cos}(22.5^{o})^{2} - 1 & .8 = \dfrac{2\,\text{Tan}(22.5^{o})}{1 - \text{Tan}(22.5^{o})^{2}} \\ .9 = 2\,\text{Sin}(15^{o})\,\text{Cos}(15^{o}) & .10 = \text{Sin}(25^{o})\,\text{Cos}(20^{o}) + \text{Cos}(25^{o})\,\text{Sin}(20^{o}) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, \text{D} = \pi\right] \\ \left[Cond1 = \left(\text{Sin}(\alpha) = \frac{1}{3}\right), Cond2 = \left(\text{Cos}(\beta) = \frac{-5}{7}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \text{Cos}(\alpha) & .2 = \text{Sin}(\beta) \\ .3 = \text{Tan}(\alpha) & .4 = \text{Sin}(\alpha - \beta) \\ .5 = \text{Cos}(\beta - \alpha) & .6 = \text{Tan}(\alpha + \beta) \\ .7 = \text{Cos}(2\beta) & .8 = \text{Tan}(2\alpha) \end{bmatrix}\end{bmatrix} \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \pi, \text{D} = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\text{Cos}(\alpha) = \frac{5}{7}\right), Cond2 = \left(\text{Sin}(\beta) = \frac{-1}{2}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \text{Sin}(\alpha) & .2 = \text{Cos}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\beta - \alpha) \\ .5 = \text{Cos}(\alpha + \beta) & .6 = \text{Tan}(\alpha - \beta) \\ .7 = \text{Cos}(2\beta) & .8 = \text{Tan}(2\alpha) \end{bmatrix}\end{bmatrix} \end{bmatrix}$$

$$No5 = [Cond = (\text{Cos}(58^{o}) = 0.530), Question = \text{Sin}(29^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\text{Cos}(6^{o}) = 0.995), Question = \text{Cos}(3^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.10868

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{5\pi}{12}\right) & .2 = \mathrm{Cos}(105^{o}) \\ .3 = \mathrm{Tan}\left(\frac{\pi}{12}\right) & .4 = \mathrm{Cot}(165^{o}) \\ .5 = \mathrm{Sin}\left(-\frac{5\pi}{12}\right) & .6 = \mathrm{Cos}((-345)^{o}) \\ .7 = \mathrm{Csc}\left(\frac{19\pi}{12}\right) & .8 = \mathrm{Tan}\left(-\frac{19\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Cos}(57^{o})\,\mathrm{Cos}(12^{o}) + \mathrm{Sin}(57^{o})\,\mathrm{Sin}(12^{o}) & .2 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^{2} \\ .3 = \mathrm{Cos}\left(\frac{2\pi}{9}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) - \mathrm{Sin}\left(\frac{2\pi}{9}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) & .4 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^{2}} \\ .5 = \mathrm{Sin}(20^{o})\,\mathrm{Cos}(10^{o}) + \mathrm{Cos}(20^{o})\,\mathrm{Sin}(10^{o}) & .6 = 2\,\mathrm{Sin}(22.5^{o})\,\mathrm{Cos}(22.5^{o}) \\ .7 = \mathrm{Sin}(40^{o})\,\mathrm{Cos}(10^{o}) - \mathrm{Cos}(40^{o})\,\mathrm{Sin}(10^{o}) & .8 = 2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^{2} - 1 \\ .9 = \mathrm{Cos}(15^{o})^{2} - \mathrm{Sin}(15^{o})^{2} & .10 = \frac{\mathrm{Tan}\left(\frac{2\pi}{5}\right) - \mathrm{Tan}\left(\frac{\pi}{15}\right)}{1 + \mathrm{Tan}\left(\frac{2\pi}{5}\right)\mathrm{Tan}\left(\frac{\pi}{15}\right)} \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, \mathrm{D} = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{3}{4}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-5}{7}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-5}{7}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-5}{9}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(36^{o}) = 0.809), Question = \mathrm{Cos}(18^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(84^{o}) = 0.105), Question = \mathrm{Sin}(42^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.10900

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}(75^{o}) & .2 = \mathrm{Sin}\left(\frac{7\,\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{\pi}{12}\right) & .4 = \mathrm{Tan}\left(\frac{11\,\pi}{12}\right) \\ .5 = \mathrm{Csc}((-15)^{o}) & .6 = \mathrm{Cos}((-105)^{o}) \\ .7 = \mathrm{Cot}\left(-\frac{17\,\pi}{12}\right) & .8 = \mathrm{Sec}\left(-\frac{23\,\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \dfrac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^{2}} & .2 = \mathrm{Sin}(42^{o})\,\mathrm{Cos}(12^{o}) - \mathrm{Cos}(42^{o})\,\mathrm{Sin}(12^{o}) \\ .3 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^{2} - 1 & .4 = \mathrm{Sin}(20^{o})\,\mathrm{Cos}(10^{o}) + \mathrm{Cos}(20^{o})\,\mathrm{Sin}(10^{o}) \\ .5 = \dfrac{\mathrm{Tan}\left(\frac{\pi}{15}\right) + \mathrm{Tan}\left(\frac{11\,\pi}{60}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{15}\right)\mathrm{Tan}\left(\frac{11\,\pi}{60}\right)} & .6 = 2\,\mathrm{Sin}(22.5^{o})\,\mathrm{Cos}(22.5^{o}) \\ .7 = \mathrm{Cos}\left(\frac{5\,\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) - \mathrm{Sin}\left(\frac{5\,\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .8 = \mathrm{Cos}\left(\frac{7\,\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) + \mathrm{Sin}\left(\frac{7\,\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) \\ .9 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^{2} & .10 = \mathrm{Cos}(15^{o})^{2} - \mathrm{Sin}(15^{o})^{2} \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, \mathrm{D} = \frac{3\,\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{3}{4}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-4}{9}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\,\beta) & .8 = \mathrm{Tan}(2\,\alpha) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\,\pi}{2}, B = 2\,\pi, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-5}{7}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-2}{7}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\,\alpha) & .8 = \mathrm{Tan}(2\,\beta) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(74^{o}) = 0.276), Question = \mathrm{Sin}(37^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(34^{o}) = 0.829), Question = \mathrm{Cos}(17^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.11693

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) & .2 = \mathrm{Cos}(75^{o}) \\ .3 = \mathrm{Tan}(15^{o}) & .4 = \mathrm{Sec}\left(-\frac{5\pi}{12}\right) \\ .5 = \mathrm{Csc}((\text{-}255)^{o}) & .6 = \mathrm{Tan}\left(\frac{19\pi}{12}\right) \\ .7 = \mathrm{Sin}((\text{-}105)^{o}) & .8 = \mathrm{Cot}\left(-\frac{11\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{8}\right)^2 & .2 = \mathrm{Cos}(70^{o})\,\mathrm{Cos}(10^{o}) + \mathrm{Sin}(70^{o})\,\mathrm{Sin}(10^{o}) \\ .3 = 2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - 1 & .4 = 1 - 2\,\mathrm{Sin}(15^{o})^2 \\ .5 = \frac{\mathrm{Tan}(18^{o}) + \mathrm{Tan}(12^{o})}{1 - \mathrm{Tan}(18^{o})\,\mathrm{Tan}(12^{o})} & .6 = \frac{\mathrm{Tan}\left(\frac{5\pi}{18}\right) - \mathrm{Tan}\left(\frac{\pi}{9}\right)}{1 + \mathrm{Tan}\left(\frac{5\pi}{18}\right)\mathrm{Tan}\left(\frac{\pi}{9}\right)} \\ .7 = \mathrm{Sin}(50^{o})\,\mathrm{Cos}(10^{o}) + \mathrm{Cos}(50^{o})\,\mathrm{Sin}(10^{o}) & .8 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^2} \\ .9 = \mathrm{Sin}\left(\frac{11\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) - \mathrm{Cos}\left(\frac{11\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .10 = 2\,\mathrm{Sin}(22.5^{o})\,\mathrm{Cos}(22.5^{o}) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{3}{8}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{\text{-}4}{7}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{\text{-}1}{2}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{2}{3}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\mathrm{Cos}(64^{o}) = 0.438),\ Question = \mathrm{Sin}(32^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\mathrm{Cos}(36^{o}) = 0.809),\ Question = \mathrm{Cos}(18^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.12097

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}(75^{o}) & .2 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) \\ .3 = \mathrm{Tan}(15^{o}) & .4 = \mathrm{Cot}\left(-\frac{5\pi}{12}\right) \\ .5 = \mathrm{Cos}((-345)^{o}) & .6 = \mathrm{Csc}\left(\frac{19\pi}{12}\right) \\ .7 = \mathrm{Sec}(255^{o}) & .8 = \mathrm{Tan}(165^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \dfrac{\mathrm{Tan}\left(\frac{5\pi}{36}\right) + \mathrm{Tan}\left(\frac{\pi}{36}\right)}{1 - \mathrm{Tan}\left(\frac{5\pi}{36}\right)\mathrm{Tan}\left(\frac{\pi}{36}\right)} & .2 = \mathrm{Cos}(85^{o})\,\mathrm{Cos}(25^{o}) + \mathrm{Sin}(85^{o})\,\mathrm{Sin}(25^{o}) \\ .3 = \dfrac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^{2}} & .4 = \mathrm{Sin}(40^{o})\,\mathrm{Cos}(10^{o}) - \mathrm{Cos}(40^{o})\,\mathrm{Sin}(10^{o}) \\ .5 = \mathrm{Sin}(48^{o})\,\mathrm{Cos}(12^{o}) + \mathrm{Cos}(48^{o})\,\mathrm{Sin}(12^{o}) & .6 = 2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^{2} - 1 \\ .7 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^{2} & .8 = \mathrm{Cos}(15^{o})^{2} - \mathrm{Sin}(15^{o})^{2} \\ .9 = 2\,\mathrm{Sin}(22.5^{o})\,\mathrm{Cos}(22.5^{o}) & .10 = \mathrm{Cos}\left(\frac{\pi}{6}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) - \mathrm{Sin}\left(\frac{\pi}{6}\right)\mathrm{Sin}\left(\frac{\pi}{12}\right) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{5}{8}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-1}{4}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Sin}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \pi, \mathrm{D} = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-1}{6}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-2}{7}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(10^{o}) = 0.985), Question = \mathrm{Sin}(5^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(38^{o}) = 0.788), Question = \mathrm{Cos}(19^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.12172

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Cos}(105^{\circ}) \\ .3 = \mathrm{Tan}\left(\frac{5\pi}{12}\right) & .4 = \mathrm{Sec}((-165)^{\circ}) \\ .5 = \mathrm{Cot}\left(-\frac{\pi}{12}\right) & .6 = \mathrm{Tan}((-285)^{\circ}) \\ .7 = \mathrm{Csc}\left(\frac{19\pi}{12}\right) & .8 = \mathrm{Sin}\left(-\frac{13\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Cos}(75^{\circ})\,\mathrm{Cos}(15^{\circ}) - \mathrm{Sin}(75^{\circ})\,\mathrm{Sin}(15^{\circ}) & .2 = \mathrm{Cos}(22.5^{\circ})^2 - \mathrm{Sin}(22.5^{\circ})^2 \\ .3 = \mathrm{Sin}\left(\frac{\pi}{15}\right)\mathrm{Cos}\left(\frac{\pi}{10}\right) + \mathrm{Cos}\left(\frac{\pi}{15}\right)\mathrm{Sin}\left(\frac{\pi}{10}\right) & .4 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^2 \\ .5 = \mathrm{Cos}(110^{\circ})\,\mathrm{Cos}(20^{\circ}) + \mathrm{Sin}(110^{\circ})\,\mathrm{Sin}(20^{\circ}) & .6 = \frac{2\,\mathrm{Tan}(15^{\circ})}{1 - \mathrm{Tan}(15^{\circ})^2} \\ .7 = \frac{\mathrm{Tan}\left(\frac{\pi}{15}\right) + \mathrm{Tan}\left(\frac{11\pi}{60}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{15}\right)\mathrm{Tan}\left(\frac{11\pi}{60}\right)} & .8 = 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)\mathrm{Cos}\left(\frac{\pi}{8}\right) \\ .9 = 2\,\mathrm{Cos}(15^{\circ})^2 - 1 & .10 = \mathrm{Sin}(40^{\circ})\,\mathrm{Cos}(10^{\circ}) - \mathrm{Cos}(40^{\circ})\,\mathrm{Sin}(10^{\circ}) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{4}{9}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-2}{7}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-1}{2}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-1}{6}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(78^{\circ}) = 0.208), Question = \mathrm{Cos}(39^{\circ})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(34^{\circ}) = 0.829), Question = \mathrm{Sin}(17^{\circ})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.12173

$$No1 = \begin{bmatrix} .1 = \text{Cos}\left(\frac{7\pi}{12}\right) & .2 = \text{Sin}(15^{o}) \\ .3 = \text{Tan}\left(\frac{5\pi}{12}\right) & .4 = \text{Cos}((-15)^{o}) \\ .5 = \text{Tan}\left(-\frac{23\pi}{12}\right) & .6 = \text{Cot}((-285)^{o}) \\ .7 = \text{Sec}\left(-\frac{11\pi}{12}\right) & .8 = \text{Csc}\left(\frac{17\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \text{Cos}(80^{o})\,\text{Cos}(20^{o}) + \text{Sin}(80^{o})\,\text{Sin}(20^{o}) & .2 = 2\,\text{Cos}\left(\frac{\pi}{12}\right)^{2} - 1 \\ .3 = 2\,\text{Sin}(15^{o})\,\text{Cos}(15^{o}) & .4 = \dfrac{\text{Tan}\left(\frac{5\pi}{36}\right) + \text{Tan}\left(\frac{\pi}{36}\right)}{1 - \text{Tan}\left(\frac{5\pi}{36}\right)\text{Tan}\left(\frac{\pi}{36}\right)} \\ .5 = \text{Sin}(57^{o})\,\text{Cos}(12^{o}) - \text{Cos}(57^{o})\,\text{Sin}(12^{o}) & .6 = \text{Cos}\left(\frac{\pi}{8}\right)^{2} - \text{Sin}\left(\frac{\pi}{8}\right)^{2} \\ .7 = \text{Sin}(50^{o})\,\text{Cos}(10^{o}) + \text{Cos}(50^{o})\,\text{Sin}(10^{o}) & .8 = \dfrac{\text{Tan}\left(\frac{7\pi}{36}\right) - \text{Tan}\left(\frac{\pi}{36}\right)}{1 + \text{Tan}\left(\frac{7\pi}{36}\right)\text{Tan}\left(\frac{\pi}{36}\right)} \\ .9 = 1 - 2\,\text{Sin}(22.5^{o})^{2} & .10 = \dfrac{2\,\text{Tan}(15^{o})}{1 - \text{Tan}(15^{o})^{2}} \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, \text{D} = 2\pi\right] \\ \left[Cond1 = \left(\text{Sin}(\alpha) = \frac{2}{3}\right), Cond2 = \left(\text{Cos}(\beta) = \frac{1}{5}\right)\right] \\ \left[\left[\begin{matrix} .1 = \text{Cos}(\alpha) & .2 = \text{Sin}(\beta) \\ .3 = \text{Tan}(\alpha) & .4 = \text{Sin}(\beta - \alpha) \\ .5 = \text{Cos}(\alpha + \beta) & .6 = \text{Tan}(\alpha - \beta) \\ .7 = \text{Cos}(2\,\alpha) & .8 = \text{Tan}(2\,\beta) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{\pi}{2}, B = \pi, C = \pi, \text{D} = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\text{Sin}(\alpha) = \frac{1}{2}\right), Cond2 = \left(\text{Cos}(\beta) = \frac{-3}{8}\right)\right] \\ \left[\left[\begin{matrix} .1 = \text{Cos}(\alpha) & .2 = \text{Sin}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\alpha + \beta) \\ .5 = \text{Cos}(\alpha - \beta) & .6 = \text{Tan}(\beta - \alpha) \\ .7 = \text{Sin}(2\,\alpha) & .8 = \text{Tan}(2\,\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\text{Cos}(10^{o}) = 0.985),\ Question = \text{Cos}(5^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\text{Cos}(54^{o}) = 0.588),\ Question = \text{Sin}(27^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.12180

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{7\pi}{12}\right) & .2 = \mathrm{Sin}(75^{o}) \\ .3 = \mathrm{Tan}(15^{o}) & .4 = \mathrm{Csc}((-75)^{o}) \\ .5 = \mathrm{Sin}\left(\frac{17\pi}{12}\right) & .6 = \mathrm{Cot}((-255)^{o}) \\ .7 = \mathrm{Tan}\left(-\frac{13\pi}{12}\right) & .8 = \mathrm{Cos}((-285)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\mathrm{Sin}(22.5^{o})\,\mathrm{Cos}(22.5^{o}) & .2 = \mathrm{Cos}(75^{o})\,\mathrm{Cos}(15^{o}) - \mathrm{Sin}(75^{o})\,\mathrm{Sin}(15^{o}) \\ .3 = \mathrm{Cos}(15^{o})^2 - \mathrm{Sin}(15^{o})^2 & .4 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^2 \\ .5 = \frac{2\,\mathrm{Tan}(15^{o})}{1 - \mathrm{Tan}(15^{o})^2} & .6 = \mathrm{Cos}(40^{o})\,\mathrm{Cos}(10^{o}) + \mathrm{Sin}(40^{o})\,\mathrm{Sin}(10^{o}) \\ .7 = \mathrm{Sin}\left(\frac{5\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{36}\right) + \mathrm{Cos}\left(\frac{5\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{36}\right) & .8 = \mathrm{Sin}(85^{o})\,\mathrm{Cos}(25^{o}) - \mathrm{Cos}(85^{o})\,\mathrm{Sin}(25^{o}) \\ .9 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - 1 & .10 = \frac{\mathrm{Tan}\left(\frac{\pi}{3}\right) - \mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 + \mathrm{Tan}\left(\frac{\pi}{3}\right)\mathrm{Tan}\left(\frac{\pi}{12}\right)} \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{1}{2}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-1}{3}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\,\alpha) & .8 = \mathrm{Tan}(2\,\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\,\pi, C = \pi, \mathrm{D} = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{2}{5}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-5}{6}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\,\alpha) & .8 = \mathrm{Tan}(2\,\beta) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\mathrm{Cos}(70^{o}) = 0.342),\ Question = \mathrm{Cos}(35^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\mathrm{Cos}(22^{o}) = 0.927),\ Question = \mathrm{Sin}(11^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.12256

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}(75^{o}) & .2 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{\pi}{12}\right) & .4 = \mathrm{Sec}\left(\frac{23\pi}{12}\right) \\ .5 = \mathrm{Sin}((-15)^{o}) & .6 = \mathrm{Cos}((-285)^{o}) \\ .7 = \mathrm{Cot}\left(-\frac{23\pi}{12}\right) & .8 = \mathrm{Tan}\left(-\frac{13\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{2\,\mathrm{Tan}(22.5^{o})}{1 - \mathrm{Tan}(22.5^{o})^{2}} & .2 = 2\,\mathrm{Sin}(15^{o})\,\mathrm{Cos}(15^{o}) \\ .3 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^{2} & .4 = \mathrm{Sin}(20^{o})\,\mathrm{Cos}(10^{o}) + \mathrm{Cos}(20^{o})\,\mathrm{Sin}(10^{o}) \\ .5 = \mathrm{Cos}\left(\frac{11\pi}{60}\right)\mathrm{Cos}\left(\frac{\pi}{15}\right) - \mathrm{Sin}\left(\frac{11\pi}{60}\right)\mathrm{Sin}\left(\frac{\pi}{15}\right) & .6 = 2\,\mathrm{Cos}(22.5^{o})^{2} - 1 \\ .7 = \mathrm{Cos}\left(\frac{\pi}{8}\right)^{2} - \mathrm{Sin}\left(\frac{\pi}{8}\right)^{2} & .8 = \frac{\mathrm{Tan}(12^{o}) + \mathrm{Tan}(48^{o})}{1 - \mathrm{Tan}(12^{o})\,\mathrm{Tan}(48^{o})} \\ .9 = \frac{\mathrm{Tan}(40^{o}) - \mathrm{Tan}(10^{o})}{1 + \mathrm{Tan}(40^{o})\,\mathrm{Tan}(10^{o})} & .10 = \mathrm{Sin}\left(\frac{7\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) - \mathrm{Cos}\left(\frac{7\pi}{12}\right)\mathrm{Sin}\left(\frac{\pi}{12}\right) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{1}{3}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{3}{8}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Sin}(2\,\alpha) & .8 = \mathrm{Tan}(2\,\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-5}{6}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-1}{4}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\,\alpha) & .8 = \mathrm{Tan}(2\,\beta) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\mathrm{Cos}(76^{o}) = 0.242),\ Question = \mathrm{Cos}(38^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\mathrm{Cos}(46^{o}) = 0.695),\ Question = \mathrm{Sin}(23^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.12278

$$No1 = \begin{bmatrix} .1 = \text{Cos}(105^{o}) & .2 = \text{Sin}\left(\frac{\pi}{12}\right) \\ .3 = \text{Tan}\left(\frac{5\pi}{12}\right) & .4 = \text{Sin}((-165)^{o}) \\ .5 = \text{Cos}\left(\frac{19\pi}{12}\right) & .6 = \text{Tan}((-345)^{o}) \\ .7 = \text{Cot}\left(-\frac{7\pi}{12}\right) & .8 = \text{Csc}((-285)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \dfrac{\text{Tan}\left(\frac{19\pi}{60}\right) - \text{Tan}\left(\frac{\pi}{15}\right)}{1 + \text{Tan}\left(\frac{19\pi}{60}\right)\text{Tan}\left(\frac{\pi}{15}\right)} & .2 = \dfrac{2\,\text{Tan}\left(\frac{\pi}{12}\right)}{1 - \text{Tan}\left(\frac{\pi}{12}\right)^2} \\ .3 = \text{Cos}(22.5^{o})^2 - \text{Sin}(22.5^{o})^2 & .4 = \dfrac{\text{Tan}(35^{o}) + \text{Tan}(25^{o})}{1 - \text{Tan}(35^{o})\,\text{Tan}(25^{o})} \\ .5 = \text{Cos}(35^{o})\,\text{Cos}(5^{o}) + \text{Sin}(35^{o})\,\text{Sin}(5^{o}) & .6 = \text{Sin}\left(\frac{7\pi}{36}\right)\text{Cos}\left(\frac{\pi}{18}\right) + \text{Cos}\left(\frac{7\pi}{36}\right)\text{Sin}\left(\frac{\pi}{18}\right) \\ .7 = \text{Sin}\left(\frac{17\pi}{30}\right)\text{Cos}\left(\frac{\pi}{15}\right) - \text{Cos}\left(\frac{17\pi}{30}\right)\text{Sin}\left(\frac{\pi}{15}\right) & .8 = 2\,\text{Cos}(15^{o})^2 - 1 \\ .9 = 2\,\text{Sin}\left(\frac{\pi}{8}\right)\text{Cos}\left(\frac{\pi}{8}\right) & .10 = 1 - 2\,\text{Sin}\left(\frac{\pi}{12}\right)^2 \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, \text{D} = 2\pi\right] \\ \left[Cond1 = \left(\text{Sin}(\alpha) = \frac{3}{8}\right), Cond2 = \left(\text{Cos}(\beta) = \frac{1}{4}\right)\right] \\ \left[\begin{bmatrix} .1 = \text{Cos}(\alpha) & .2 = \text{Sin}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\alpha + \beta) \\ .5 = \text{Cos}(\beta - \alpha) & .6 = \text{Tan}(\alpha - \beta) \\ .7 = \text{Sin}(2\alpha) & .8 = \text{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{\pi}{2}, B = \pi, C = \pi, \text{D} = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\text{Cos}(\alpha) = \frac{-4}{7}\right), Cond2 = \left(\text{Sin}(\beta) = \frac{-1}{2}\right)\right] \\ \left[\begin{bmatrix} .1 = \text{Sin}(\alpha) & .2 = \text{Cos}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\alpha + \beta) \\ .5 = \text{Cos}(\beta - \alpha) & .6 = \text{Tan}(\alpha - \beta) \\ .7 = \text{Sin}(2\alpha) & .8 = \text{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\text{Cos}(86^{o}) = 0.070), Question = \text{Cos}(43^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\text{Cos}(22^{o}) = 0.927), Question = \text{Sin}(11^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.12482

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Sin}(105^{o}) \\ .3 = \mathrm{Tan}(75^{o}) & .4 = \mathrm{Cos}(195^{o}) \\ .5 = \mathrm{Csc}\left(\frac{19\,\pi}{12}\right) & .6 = \mathrm{Tan}\left(\frac{17\,\pi}{12}\right) \\ .7 = \mathrm{Cot}((-165)^{o}) & .8 = \mathrm{Sec}((-285)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \dfrac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^{2}} & .2 = \mathrm{Cos}(22.5^{o})^{2} - \mathrm{Sin}(22.5^{o})^{2} \\ .3 = \dfrac{\mathrm{Tan}\left(\frac{\pi}{15}\right) + \mathrm{Tan}\left(\frac{11\,\pi}{60}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{15}\right)\mathrm{Tan}\left(\frac{11\,\pi}{60}\right)} & .4 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^{2} - 1 \\ .5 = \mathrm{Sin}(105^{o})\,\mathrm{Cos}(15^{o}) - \mathrm{Cos}(105^{o})\,\mathrm{Sin}(15^{o}) & .6 = \mathrm{Sin}\left(\frac{\pi}{18}\right)\mathrm{Cos}\left(\frac{5\,\pi}{18}\right) + \mathrm{Cos}\left(\frac{\pi}{18}\right)\mathrm{Sin}\left(\frac{5\,\pi}{18}\right) \\ .7 = \mathrm{Cos}(10^{o})\,\mathrm{Cos}(20^{o}) - \mathrm{Sin}(10^{o})\,\mathrm{Sin}(20^{o}) & .8 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^{2} \\ .9 = 2\,\mathrm{Sin}(15^{o})\,\mathrm{Cos}(15^{o}) & .10 = \dfrac{\mathrm{Tan}(80^{o}) - \mathrm{Tan}(20^{o})}{1 + \mathrm{Tan}(80^{o})\,\mathrm{Tan}(20^{o})} \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\,\pi}{2}, \mathrm{D} = 2\,\pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{5}{7}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{3}{7}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\,\beta) & .8 = \mathrm{Tan}(2\,\alpha) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{\pi}{2}, B = \pi, C = \pi, \mathrm{D} = \frac{3\,\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-3}{4}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-2}{7}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\,\alpha) & .8 = \mathrm{Tan}(2\,\beta) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\mathrm{Cos}(72^{o}) = 0.309),\ Question = \mathrm{Cos}(36^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\mathrm{Cos}(24^{o}) = 0.914),\ Question = \mathrm{Sin}(12^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.12586

$$No1 = \begin{bmatrix} .1 = \text{Cos}\left(\frac{\pi}{12}\right) & .2 = \text{Sin}(75^{o}) \\ .3 = \text{Tan}\left(\frac{7\pi}{12}\right) & .4 = \text{Cos}((\text{-}105)^{o}) \\ .5 = \text{Tan}\left(\frac{17\pi}{12}\right) & .6 = \text{Sin}\left(-\frac{19\pi}{12}\right) \\ .7 = \text{Csc}(195^{o}) & .8 = \text{Sec}\left(-\frac{13\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 1 - 2\,\text{Sin}\left(\frac{\pi}{12}\right)^2 & .2 = 2\,\text{Sin}\left(\frac{\pi}{8}\right)\text{Cos}\left(\frac{\pi}{8}\right) \\ .3 = \text{Cos}(22.5^{o})^2 - \text{Sin}(22.5^{o})^2 & .4 = \frac{\text{Tan}\left(\frac{5\pi}{18}\right) + \text{Tan}\left(\frac{\pi}{18}\right)}{1 - \text{Tan}\left(\frac{5\pi}{18}\right)\text{Tan}\left(\frac{\pi}{18}\right)} \\ .5 = 2\,\text{Cos}(15^{o})^2 - 1 & .6 = \text{Sin}(60^{o})\,\text{Cos}(15^{o}) - \text{Cos}(60^{o})\,\text{Sin}(15^{o}) \\ .7 = \text{Cos}\left(\frac{11\pi}{18}\right)\text{Cos}\left(\frac{\pi}{9}\right) + \text{Sin}\left(\frac{11\pi}{18}\right)\text{Sin}\left(\frac{\pi}{9}\right) & .8 = \frac{2\,\text{Tan}(22.5^{o})}{1 - \text{Tan}(22.5^{o})^2} \\ .9 = \frac{\text{Tan}(35^{o}) - \text{Tan}(5^{o})}{1 + \text{Tan}(35^{o})\,\text{Tan}(5^{o})} & .10 = \text{Sin}(12^{o})\,\text{Cos}(33^{o}) + \text{Cos}(12^{o})\,\text{Sin}(33^{o}) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\text{Cos}(\alpha) = \frac{2}{3}\right), Cond2 = \left(\text{Sin}(\beta) = \frac{-2}{7}\right)\right] \\ \left[\left[\begin{matrix} .1 = \text{Sin}(\alpha) & .2 = \text{Cos}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\alpha - \beta) \\ .5 = \text{Cos}(\alpha + \beta) & .6 = \text{Tan}(\beta - \alpha) \\ .7 = \text{Cos}(2\beta) & .8 = \text{Tan}(2\alpha) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\text{Sin}(\alpha) = \frac{-1}{4}\right), Cond2 = \left(\text{Cos}(\beta) = \frac{-1}{2}\right)\right] \\ \left[\left[\begin{matrix} .1 = \text{Cos}(\alpha) & .2 = \text{Sin}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\alpha - \beta) \\ .5 = \text{Cos}(\beta - \alpha) & .6 = \text{Tan}(\alpha + \beta) \\ .7 = \text{Cos}(2\alpha) & .8 = \text{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\text{Cos}(74^{o}) = 0.276), Question = \text{Cos}(37^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\text{Cos}(40^{o}) = 0.766), Question = \text{Sin}(20^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.12677

$$No1 = \begin{bmatrix} .1 = \cos\left(\frac{7\pi}{12}\right) & .2 = \sin(75^o) \\ .3 = \tan\left(\frac{\pi}{12}\right) & .4 = \tan\left(-\frac{\pi}{12}\right) \\ .5 = \sec((-285)^o) & .6 = \cot((-105)^o) \\ .7 = \sin\left(\frac{19\pi}{12}\right) & .8 = \cos\left(-\frac{5\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{\tan(20^o) + \tan(40^o)}{1 - \tan(20^o)\tan(40^o)} & .2 = \frac{\tan\left(\frac{5\pi}{18}\right) - \tan\left(\frac{\pi}{9}\right)}{1 + \tan\left(\frac{5\pi}{18}\right)\tan\left(\frac{\pi}{9}\right)} \\ .3 = \frac{2\tan\left(\frac{\pi}{8}\right)}{1 - \tan\left(\frac{\pi}{8}\right)^2} & .4 = 1 - 2\sin(22.5^o)^2 \\ .5 = \cos(105^o)\cos(15^o) + \sin(105^o)\sin(15^o) & .6 = \sin\left(\frac{13\pi}{36}\right)\cos\left(\frac{\pi}{9}\right) - \cos\left(\frac{13\pi}{36}\right)\sin\left(\frac{\pi}{9}\right) \\ .7 = \cos(35^o)\cos(10^o) - \sin(35^o)\sin(10^o) & .8 = \cos(15^o)^2 - \sin(15^o)^2 \\ .9 = 2\sin\left(\frac{\pi}{12}\right)\cos\left(\frac{\pi}{12}\right) & .10 = 2\cos\left(\frac{\pi}{8}\right)^2 - 1 \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\cos(\alpha) = \frac{2}{3}\right), Cond2 = \left(\sin(\beta) = \frac{1}{2}\right)\right] \\ \left[\left[\begin{matrix} .1 = \sin(\alpha) & .2 = \cos(\beta) \\ .3 = \tan(\alpha) & .4 = \sin(\beta - \alpha) \\ .5 = \cos(\alpha - \beta) & .6 = \tan(\alpha + \beta) \\ .7 = \sin(2\alpha) & .8 = \tan(2\beta) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\cos(\alpha) = \frac{1}{2}\right), Cond2 = \left(\sin(\beta) = \frac{-2}{5}\right)\right] \\ \left[\left[\begin{matrix} .1 = \sin(\alpha) & .2 = \cos(\beta) \\ .3 = \tan(\alpha) & .4 = \sin(\alpha + \beta) \\ .5 = \cos(\alpha - \beta) & .6 = \tan(\beta - \alpha) \\ .7 = \cos(2\beta) & .8 = \tan(2\alpha) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\cos(70^o) = 0.342), Question = \sin(35^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\cos(6^o) = 0.995), Question = \cos(3^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.13490

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}(105^{o}) & .2 = \mathrm{Cos}\left(\frac{5\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{\pi}{12}\right) & .4 = \mathrm{Tan}(255^{o}) \\ .5 = \mathrm{Sec}\left(\frac{23\pi}{12}\right) & .6 = \mathrm{Sin}(285^{o}) \\ .7 = \mathrm{Csc}\left(-\frac{17\pi}{12}\right) & .8 = \mathrm{Cot}\left(-\frac{11\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{\pi}{18}\right)\mathrm{Cos}\left(\frac{4\pi}{9}\right) - \mathrm{Sin}\left(\frac{\pi}{18}\right)\mathrm{Sin}\left(\frac{4\pi}{9}\right) & .2 = 1 - 2\,\mathrm{Sin}(15^{o})^{2} \\ .3 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^{2}} & .4 = 2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^{2} - 1 \\ .5 = \frac{\mathrm{Tan}(10^{o}) + \mathrm{Tan}(20^{o})}{1 - \mathrm{Tan}(10^{o})\,\mathrm{Tan}(20^{o})} & .6 = \mathrm{Cos}(22.5^{o})^{2} - \mathrm{Sin}(22.5^{o})^{2} \\ .7 = \frac{\mathrm{Tan}\left(\frac{4\pi}{9}\right) - \mathrm{Tan}\left(\frac{\pi}{9}\right)}{1 + \mathrm{Tan}\left(\frac{4\pi}{9}\right)\mathrm{Tan}\left(\frac{\pi}{9}\right)} & .8 = \mathrm{Sin}(25^{o})\,\mathrm{Cos}(20^{o}) + \mathrm{Cos}(25^{o})\,\mathrm{Sin}(20^{o}) \\ .9 = 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)\mathrm{Cos}\left(\frac{\pi}{8}\right) & .10 = \mathrm{Sin}\left(\frac{11\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) - \mathrm{Cos}\left(\frac{11\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{1}{5}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-3}{8}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-5}{7}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-1}{3}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\mathrm{Cos}(48^{o}) = 0.669),\ Question = \mathrm{Sin}(24^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\mathrm{Cos}(20^{o}) = 0.940),\ Question = \mathrm{Cos}(10^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.13500

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) & .2 = \mathrm{Cos}(75^o) \\ .3 = \mathrm{Tan}(15^o) & .4 = \mathrm{Cos}\left(\frac{19\pi}{12}\right) \\ .5 = \mathrm{Tan}(255^o) & .6 = \mathrm{Sec}\left(-\frac{13\pi}{12}\right) \\ .7 = \mathrm{Sin}(165^o) & .8 = \mathrm{Cot}(195^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^2} & .2 = \mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{12}\right)^2 \\ .3 = \mathrm{Sin}(25^o)\,\mathrm{Cos}(20^o) + \mathrm{Cos}(25^o)\,\mathrm{Sin}(20^o) & .4 = \frac{\mathrm{Tan}(10^o) + \mathrm{Tan}(20^o)}{1 - \mathrm{Tan}(10^o)\,\mathrm{Tan}(20^o)} \\ .5 = 2\,\mathrm{Cos}(15^o)^2 - 1 & .6 = \mathrm{Cos}\left(\frac{5\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) - \mathrm{Sin}\left(\frac{5\pi}{12}\right)\mathrm{Sin}\left(\frac{\pi}{12}\right) \\ .7 = 2\,\mathrm{Sin}(22.5^o)\,\mathrm{Cos}(22.5^o) & .8 = \frac{\mathrm{Tan}(50^o) - \mathrm{Tan}(20^o)}{1 + \mathrm{Tan}(50^o)\,\mathrm{Tan}(20^o)} \\ .9 = \mathrm{Cos}\left(\frac{13\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) + \mathrm{Sin}\left(\frac{13\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) & .10 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^2 \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{3}{8}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-2}{7}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\,\alpha) & .8 = \mathrm{Tan}(2\,\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\,\pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-1}{3}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{5}{6}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\,\beta) & .8 = \mathrm{Tan}(2\,\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\mathrm{Cos}(84^o) = 0.105), Question = \mathrm{Cos}(42^o)\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\mathrm{Cos}(12^o) = 0.978), Question = \mathrm{Sin}(6^o)\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.13637

$$No1 = \begin{bmatrix} .1 = \operatorname{Sin}\left(\frac{\pi}{12}\right) & .2 = \operatorname{Cos}(105^{o}) \\ .3 = \operatorname{Tan}\left(\frac{5\pi}{12}\right) & .4 = \operatorname{Sec}((-105)^{o}) \\ .5 = \operatorname{Cos}\left(\frac{19\pi}{12}\right) & .6 = \operatorname{Tan}\left(-\frac{19\pi}{12}\right) \\ .7 = \operatorname{Csc}((-345)^{o}) & .8 = \operatorname{Cot}((-15)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{\operatorname{Tan}\left(\frac{5\pi}{36}\right) + \operatorname{Tan}\left(\frac{7\pi}{36}\right)}{1 - \operatorname{Tan}\left(\frac{5\pi}{36}\right)\operatorname{Tan}\left(\frac{7\pi}{36}\right)} & .2 = \operatorname{Sin}(35^{o})\operatorname{Cos}(5^{o}) - \operatorname{Cos}(35^{o})\operatorname{Sin}(5^{o}) \\ .3 = \operatorname{Sin}(5^{o})\operatorname{Cos}(25^{o}) + \operatorname{Cos}(5^{o})\operatorname{Sin}(25^{o}) & .4 = \frac{\operatorname{Tan}(57^{o}) - \operatorname{Tan}(12^{o})}{1 + \operatorname{Tan}(57^{o})\operatorname{Tan}(12^{o})} \\ .5 = \operatorname{Cos}(22.5^{o})^2 - \operatorname{Sin}(22.5^{o})^2 & .6 = \operatorname{Cos}\left(\frac{\pi}{9}\right)\operatorname{Cos}\left(\frac{7\pi}{18}\right) - \operatorname{Sin}\left(\frac{\pi}{9}\right)\operatorname{Sin}\left(\frac{7\pi}{18}\right) \\ .7 = \frac{2\operatorname{Tan}(15^{o})}{1 - \operatorname{Tan}(15^{o})^2} & .8 = 2\operatorname{Sin}\left(\frac{\pi}{12}\right)\operatorname{Cos}\left(\frac{\pi}{12}\right) \\ .9 = 2\operatorname{Cos}\left(\frac{\pi}{8}\right)^2 - 1 & .10 = 1 - 2\operatorname{Sin}(15^{o})^2 \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\operatorname{Sin}(\alpha) = \frac{5}{6}\right), Cond2 = \left(\operatorname{Cos}(\beta) = \frac{-3}{7}\right)\right] \\ \left[\begin{bmatrix} .1 = \operatorname{Cos}(\alpha) & .2 = \operatorname{Sin}(\beta) \\ .3 = \operatorname{Tan}(\alpha) & .4 = \operatorname{Sin}(\alpha + \beta) \\ .5 = \operatorname{Cos}(\alpha - \beta) & .6 = \operatorname{Tan}(\beta - \alpha) \\ .7 = \operatorname{Sin}(2\alpha) & .8 = \operatorname{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\operatorname{Cos}(\alpha) = \frac{5}{6}\right), Cond2 = \left(\operatorname{Sin}(\beta) = \frac{-1}{5}\right)\right] \\ \left[\begin{bmatrix} .1 = \operatorname{Sin}(\alpha) & .2 = \operatorname{Cos}(\beta) \\ .3 = \operatorname{Tan}(\alpha) & .4 = \operatorname{Sin}(\alpha + \beta) \\ .5 = \operatorname{Cos}(\beta - \alpha) & .6 = \operatorname{Tan}(\alpha - \beta) \\ .7 = \operatorname{Sin}(2\beta) & .8 = \operatorname{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\operatorname{Cos}(34^{o}) = 0.829), Question = \operatorname{Sin}(17^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\operatorname{Cos}(14^{o}) = 0.970), Question = \operatorname{Cos}(7^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.645101

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Sin}(75^{o}) \\ .3 = \mathrm{Tan}(105^{o}) & .4 = \mathrm{Sec}(195^{o}) \\ .5 = \mathrm{Tan}\left(-\frac{19\pi}{12}\right) & .6 = \mathrm{Cos}\left(-\frac{23\pi}{12}\right) \\ .7 = \mathrm{Sin}(255^{o}) & .8 = \mathrm{Csc}\left(\frac{11\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{\mathrm{Tan}\left(\frac{13\pi}{36}\right) - \mathrm{Tan}\left(\frac{\pi}{9}\right)}{1 + \mathrm{Tan}\left(\frac{13\pi}{36}\right)\mathrm{Tan}\left(\frac{\pi}{9}\right)} & .2 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^{2} - 1 \\ .3 = \mathrm{Sin}\left(\frac{\pi}{15}\right)\mathrm{Cos}\left(\frac{13\pi}{30}\right) + \mathrm{Cos}\left(\frac{\pi}{15}\right)\mathrm{Sin}\left(\frac{13\pi}{30}\right) & .4 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^{2}} \\ .5 = 2\,\mathrm{Sin}(22.5^{o})\,\mathrm{Cos}(22.5^{o}) & .6 = \frac{\mathrm{Tan}(18^{o}) + \mathrm{Tan}(12^{o})}{1 - \mathrm{Tan}(18^{o})\,\mathrm{Tan}(12^{o})} \\ .7 = \mathrm{Sin}\left(\frac{7\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) - \mathrm{Cos}\left(\frac{7\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .8 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^{2} \\ .9 = \mathrm{Cos}(15^{o})^{2} - \mathrm{Sin}(15^{o})^{2} & .10 = \mathrm{Cos}(12^{o})\,\mathrm{Cos}(48^{o}) - \mathrm{Sin}(12^{o})\,\mathrm{Sin}(48^{o}) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{1}{3}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{5}{7}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-1}{6}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{1}{3}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\mathrm{Cos}(42^{o}) = 0.743),\ Question = \mathrm{Cos}(21^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\mathrm{Cos}(70^{o}) = 0.342),\ Question = \mathrm{Sin}(35^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.645102

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{5\pi}{12}\right) & .2 = \mathrm{Cos}(105^{o}) \\ .3 = \mathrm{Tan}\left(\frac{\pi}{12}\right) & .4 = \mathrm{Cot}\left(-\frac{23\pi}{12}\right) \\ .5 = \mathrm{Sec}(345^{o}) & .6 = \mathrm{Cos}\left(-\frac{7\pi}{12}\right) \\ .7 = \mathrm{Csc}((-75)^{o}) & .8 = \mathrm{Tan}(195^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Cos}(40^{o})\,\mathrm{Cos}(10^{o}) + \mathrm{Sin}(40^{o})\,\mathrm{Sin}(10^{o}) & .2 = \mathrm{Sin}\left(\frac{\pi}{15}\right)\mathrm{Cos}\left(\frac{\pi}{10}\right) + \mathrm{Cos}\left(\frac{\pi}{15}\right)\mathrm{Sin}\left(\frac{\pi}{10}\right) \\ .3 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) & .4 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^2} \\ .5 = \frac{\mathrm{Tan}\left(\frac{11\pi}{36}\right) - \mathrm{Tan}\left(\frac{\pi}{18}\right)}{1 + \mathrm{Tan}\left(\frac{11\pi}{36}\right)\mathrm{Tan}\left(\frac{\pi}{18}\right)} & .6 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^2 \\ .7 = \frac{\mathrm{Tan}\left(\frac{4\pi}{15}\right) + \mathrm{Tan}\left(\frac{\pi}{15}\right)}{1 - \mathrm{Tan}\left(\frac{4\pi}{15}\right)\mathrm{Tan}\left(\frac{\pi}{15}\right)} & .8 = 2\,\mathrm{Cos}(15^{o})^2 - 1 \\ .9 = \mathrm{Cos}(22.5^{o})^2 - \mathrm{Sin}(22.5^{o})^2 & .10 = \mathrm{Sin}(80^{o})\,\mathrm{Cos}(20^{o}) - \mathrm{Cos}(80^{o})\,\mathrm{Sin}(20^{o}) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{1}{3}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{1}{2}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Sin}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-2}{3}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-5}{9}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(44^{o}) = 0.719), Question = \mathrm{Sin}(22^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(8^{o}) = 0.990), Question = \mathrm{Cos}(4^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645103

$$No1 = \begin{bmatrix} .1 = \cos\left(\frac{5\pi}{12}\right) & .2 = \sin(15^o) \\ .3 = \tan\left(\frac{7\pi}{12}\right) & .4 = \sec\left(-\frac{19\pi}{12}\right) \\ .5 = \tan(255^o) & .6 = \cos\left(-\frac{5\pi}{12}\right) \\ .7 = \cot(285^o) & .8 = \csc\left(-\frac{17\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \cos(15^o)^2 - \sin(15^o)^2 & .2 = 2\cos\left(\frac{\pi}{12}\right)^2 - 1 \\ .3 = \cos\left(\frac{\pi}{36}\right)\cos\left(\frac{5\pi}{36}\right) - \sin\left(\frac{\pi}{36}\right)\sin\left(\frac{5\pi}{36}\right) & .4 = 2\sin\left(\frac{\pi}{8}\right)\cos\left(\frac{\pi}{8}\right) \\ .5 = \frac{\tan\left(\frac{\pi}{9}\right) + \tan\left(\frac{2\pi}{9}\right)}{1 - \tan\left(\frac{\pi}{9}\right)\tan\left(\frac{2\pi}{9}\right)} & .6 = \frac{2\tan(22.5^o)}{1 - \tan(22.5^o)^2} \\ .7 = \sin(80^o)\cos(10^o) + \cos(80^o)\sin(10^o) & .8 = 1 - 2\sin(22.5^o)^2 \\ .9 = \cos(85^o)\cos(25^o) + \sin(85^o)\sin(25^o) & .10 = \sin(110^o)\cos(20^o) - \cos(110^o)\sin(20^o) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\sin(\alpha) = \frac{4}{9}\right), Cond2 = \left(\cos(\beta) = \frac{-1}{2}\right)\right] \\ \left[\left[\begin{matrix} .1 = \cos(\alpha) & .2 = \sin(\beta) \\ .3 = \tan(\beta) & .4 = \sin(\beta - \alpha) \\ .5 = \cos(\alpha - \beta) & .6 = \tan(\alpha + \beta) \\ .7 = \cos(2\beta) & .8 = \tan(2\alpha) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\sin(\alpha) = \frac{-2}{3}\right), Cond2 = \left(\cos(\beta) = \frac{1}{2}\right)\right] \\ \left[\left[\begin{matrix} .1 = \cos(\alpha) & .2 = \sin(\beta) \\ .3 = \tan(\beta) & .4 = \sin(\beta - \alpha) \\ .5 = \cos(\alpha - \beta) & .6 = \tan(\alpha + \beta) \\ .7 = \sin(2\alpha) & .8 = \tan(2\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\cos(72^o) = 0.309),\ Question = \cos(36^o)\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\cos(14^o) = 0.970),\ Question = \sin(7^o)\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645104

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Cos}(105^{o}) \\ .3 = \mathrm{Tan}(75^{o}) & .4 = \mathrm{Tan}(165^{o}) \\ .5 = \mathrm{Cos}\left(-\frac{7\pi}{12}\right) & .6 = \mathrm{Csc}(285^{o}) \\ .7 = \mathrm{Sec}\left(-\frac{11\pi}{12}\right) & .8 = \mathrm{Cot}\left(-\frac{17\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{12}\right)^2 & .2 = 2\,\mathrm{Sin}(22.5^{o})\,\mathrm{Cos}(22.5^{o}) \\ .3 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^2 & .4 = \mathrm{Sin}\left(\frac{\pi}{18}\right)\mathrm{Cos}\left(\frac{5\pi}{18}\right) + \mathrm{Cos}\left(\frac{\pi}{18}\right)\mathrm{Sin}\left(\frac{5\pi}{18}\right) \\ .5 = \mathrm{Sin}\left(\frac{7\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) - \mathrm{Cos}\left(\frac{7\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .6 = \mathrm{Cos}(55^{o})\,\mathrm{Cos}(10^{o}) + \mathrm{Sin}(55^{o})\,\mathrm{Sin}(10^{o}) \\ .7 = \frac{\mathrm{Tan}(15^{o}) + \mathrm{Tan}(30^{o})}{1 - \mathrm{Tan}(15^{o})\,\mathrm{Tan}(30^{o})} & .8 = 2\,\mathrm{Cos}(15^{o})^2 - 1 \\ .9 = \frac{\mathrm{Tan}\left(\frac{2\pi}{9}\right) - \mathrm{Tan}\left(\frac{\pi}{18}\right)}{1 + \mathrm{Tan}\left(\frac{2\pi}{9}\right)\mathrm{Tan}\left(\frac{\pi}{18}\right)} & .10 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^2} \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{5}{7}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-3}{5}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{1}{2}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{2}{7}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(50^{o}) = 0.643), Question = \mathrm{Cos}(25^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(28^{o}) = 0.883), Question = \mathrm{Sin}(14^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645105

$$No1 = \begin{bmatrix} .1 = \cos\left(\frac{5\pi}{12}\right) & .2 = \sin(105^o) \\ .3 = \tan\left(\frac{\pi}{12}\right) & .4 = \csc((-75)^o) \\ .5 = \cot\left(\frac{13\pi}{12}\right) & .6 = \sec((-285)^o) \\ .7 = \tan\left(-\frac{13\pi}{12}\right) & .8 = \cos((-105)^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \sin(85^o)\cos(25^o) - \cos(85^o)\sin(25^o) & .2 = \cos\left(\frac{\pi}{12}\right)^2 - \sin\left(\frac{\pi}{12}\right)^2 \\ .3 = \frac{2\tan\left(\frac{\pi}{8}\right)}{1 - \tan\left(\frac{\pi}{8}\right)^2} & .4 = 2\sin(15^o)\cos(15^o) \\ .5 = 2\cos(22.5^o)^2 - 1 & .6 = \cos\left(\frac{5\pi}{12}\right)\cos\left(\frac{\pi}{12}\right) - \sin\left(\frac{5\pi}{12}\right)\sin\left(\frac{\pi}{12}\right) \\ .7 = \sin(12^o)\cos(33^o) + \cos(12^o)\sin(33^o) & .8 = \frac{\tan\left(\frac{5\pi}{18}\right) + \tan\left(\frac{\pi}{18}\right)}{1 - \tan\left(\frac{5\pi}{18}\right)\tan\left(\frac{\pi}{18}\right)} \\ .9 = \cos(105^o)\cos(15^o) + \sin(105^o)\sin(15^o) & .10 = 1 - 2\sin\left(\frac{\pi}{8}\right)^2 \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\sin(\alpha) = \frac{1}{2}\right), Cond2 = \left(\cos(\beta) = \frac{5}{6}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \cos(\alpha) & .2 = \sin(\beta) \\ .3 = \tan(\beta) & .4 = \sin(\alpha - \beta) \\ .5 = \cos(\alpha + \beta) & .6 = \tan(\beta - \alpha) \\ .7 = \cos(2\beta) & .8 = \tan(2\alpha) \end{bmatrix}\end{bmatrix} \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{\pi}{2}, B = \pi, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\sin(\alpha) = \frac{1}{4}\right), Cond2 = \left(\cos(\beta) = \frac{-3}{8}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \cos(\alpha) & .2 = \sin(\beta) \\ .3 = \tan(\beta) & .4 = \sin(\alpha + \beta) \\ .5 = \cos(\beta - \alpha) & .6 = \tan(\alpha - \beta) \\ .7 = \sin(2\beta) & .8 = \tan(2\alpha) \end{bmatrix}\end{bmatrix} \end{bmatrix}$$

$$No5 = [Cond = (\cos(46^o) = 0.695), Question = \sin(23^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\cos(18^o) = 0.951), Question = \cos(9^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.645106

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}(75^{o}) & .2 = \mathrm{Cos}\left(\frac{7\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{\pi}{12}\right) & .4 = \mathrm{Sec}(255^{o}) \\ .5 = \mathrm{Csc}\left(-\frac{\pi}{12}\right) & .6 = \mathrm{Cos}(345^{o}) \\ .7 = \mathrm{Sin}\left(\frac{11\pi}{12}\right) & .8 = \mathrm{Cot}\left(\frac{19\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^2} & .2 = \mathrm{Cos}(75^{o})\,\mathrm{Cos}(15^{o}) - \mathrm{Sin}(75^{o})\,\mathrm{Sin}(15^{o}) \\ .3 = 2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - 1 & .4 = \mathrm{Cos}(15^{o})^2 - \mathrm{Sin}(15^{o})^2 \\ .5 = \frac{\mathrm{Tan}\left(\frac{2\pi}{5}\right) - \mathrm{Tan}\left(\frac{\pi}{15}\right)}{1 + \mathrm{Tan}\left(\frac{2\pi}{5}\right)\mathrm{Tan}\left(\frac{\pi}{15}\right)} & .6 = 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)\mathrm{Cos}\left(\frac{\pi}{8}\right) \\ .7 = 1 - 2\,\mathrm{Sin}(22.5^{o})^2 & .8 = \mathrm{Cos}(50^{o})\,\mathrm{Cos}(20^{o}) + \mathrm{Sin}(50^{o})\,\mathrm{Sin}(20^{o}) \\ .9 = \frac{\mathrm{Tan}(10^{o}) + \mathrm{Tan}(20^{o})}{1 - \mathrm{Tan}(10^{o})\,\mathrm{Tan}(20^{o})} & .10 = \mathrm{Sin}\left(\frac{\pi}{18}\right)\mathrm{Cos}\left(\frac{5\pi}{18}\right) + \mathrm{Cos}\left(\frac{\pi}{18}\right)\mathrm{Sin}\left(\frac{5\pi}{18}\right) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ [[P, V, S, S]] \\ \& \\ [[M, a, t, h, @, M, U, T]] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{5}{7}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{1}{2}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Sin}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-1}{3}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{1}{2}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(16^{o}) = 0.961), Question = \mathrm{Sin}(8^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(40^{o}) = 0.766), Question = \mathrm{Cos}(20^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645107

$$No1=\begin{bmatrix} .1=\mathrm{Sin}(15^{o}) & .2=\mathrm{Cos}\left(\frac{5\pi}{12}\right)\\ .3=\mathrm{Tan}\left(\frac{7\pi}{12}\right) & .4=\mathrm{Cos}\left(\frac{17\pi}{12}\right)\\ .5=\mathrm{Cot}((-75)^{o}) & .6=\mathrm{Sin}(345^{o})\\ .7=\mathrm{Csc}\left(-\frac{7\pi}{12}\right) & .8=\mathrm{Sec}\left(\frac{13\pi}{12}\right)\end{bmatrix}, No2=\begin{bmatrix} .1=1-2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^2 & .2=\mathrm{Cos}\left(\frac{\pi}{12}\right)^2-\mathrm{Sin}\left(\frac{\pi}{12}\right)^2\\ .3=\mathrm{Sin}(30^{o})\,\mathrm{Cos}(15^{o})+\mathrm{Cos}(30^{o})\,\mathrm{Sin}(15^{o}) & .4=2\,\mathrm{Cos}(15^{o})^2-1\\ .5=\mathrm{Cos}(50^{o})\,\mathrm{Cos}(20^{o})+\mathrm{Sin}(50^{o})\,\mathrm{Sin}(20^{o}) & .6=\mathrm{Sin}(57^{o})\,\mathrm{Cos}(12^{o})-\mathrm{Cos}(57^{o})\,\mathrm{Sin}(12^{o})\\ .7=\dfrac{\mathrm{Tan}\left(\frac{17\pi}{36}\right)-\mathrm{Tan}\left(\frac{5\pi}{36}\right)}{1+\mathrm{Tan}\left(\frac{17\pi}{36}\right)\mathrm{Tan}\left(\frac{5\pi}{36}\right)} & .8=2\,\mathrm{Sin}(22.5^{o})\,\mathrm{Cos}(22.5^{o})\\ .9=\dfrac{\mathrm{Tan}\left(\frac{\pi}{9}\right)+\mathrm{Tan}\left(\frac{2\pi}{9}\right)}{1-\mathrm{Tan}\left(\frac{\pi}{9}\right)\mathrm{Tan}\left(\frac{2\pi}{9}\right)} & .10=\dfrac{2\,\mathrm{Tan}(22.5^{o})}{1-\mathrm{Tan}(22.5^{o})^2}\end{bmatrix}, \quad, \begin{bmatrix}\frac{:)}{:(}\\ \left[\left[\begin{matrix}P\\V\\S\\S\end{matrix}\right]\right]\\ \&\\ \left[\left[\begin{matrix}M\\a\\t\\h\\@\\M\\U\\T\end{matrix}\right]\right]\\ \frac{:)}{:(}\\ \frac{:)}{:(}\end{bmatrix}$$

$$No3=\begin{bmatrix}\left[A=0, B=\frac{\pi}{2}, C=\frac{\pi}{2}, \mathrm{D}=\pi\right]\\ \left[Cond1=\left(\mathrm{Cos}(\alpha)=\frac{1}{2}\right), Cond2=\left(\mathrm{Sin}(\beta)=\frac{3}{5}\right)\right]\\ \left[\left[\begin{matrix} .1=\mathrm{Sin}(\alpha) & .2=\mathrm{Cos}(\beta)\\ .3=\mathrm{Tan}(\beta) & .4=\mathrm{Sin}(\alpha-\beta)\\ .5=\mathrm{Cos}(\beta-\alpha) & .6=\mathrm{Tan}(\alpha+\beta)\\ .7=\mathrm{Cos}(2\alpha) & .8=\mathrm{Tan}(2\beta)\end{matrix}\right]\right]\end{bmatrix}, \quad, No4=\begin{bmatrix}\left[A=\pi, B=\frac{3\pi}{2}, C=\frac{3\pi}{2}, \mathrm{D}=2\pi\right]\\ \left[Cond1=\left(\mathrm{Cos}(\alpha)=\frac{-4}{5}\right), Cond2=\left(\mathrm{Sin}(\beta)=\frac{-1}{3}\right)\right]\\ \left[\left[\begin{matrix} .1=\mathrm{Sin}(\alpha) & .2=\mathrm{Cos}(\beta)\\ .3=\mathrm{Tan}(\alpha) & .4=\mathrm{Sin}(\beta-\alpha)\\ .5=\mathrm{Cos}(\alpha+\beta) & .6=\mathrm{Tan}(\alpha-\beta)\\ .7=\mathrm{Cos}(2\beta) & .8=\mathrm{Tan}(2\alpha)\end{matrix}\right]\right]\end{bmatrix}$$

$$No5=[Cond=(\mathrm{Cos}(6^{o})=0.995), Question=\mathrm{Cos}(3^{o})], \quad, \begin{bmatrix}M\\U\\T\end{bmatrix}$$

$$No6=[Cond=(\mathrm{Cos}(42^{o})=0.743), Question=\mathrm{Sin}(21^{o})], \quad, \begin{bmatrix}M\\U\\T\end{bmatrix}$$

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TrigonometryExercise4 for No.645108

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}(105^{o}) & .2 = \mathrm{Cos}\left(\frac{5\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{\pi}{12}\right) & .4 = \mathrm{Sec}((-345)^{o}) \\ .5 = \mathrm{Sin}\left(\frac{19\pi}{12}\right) & .6 = \mathrm{Csc}\left(-\frac{19\pi}{12}\right) \\ .7 = \mathrm{Tan}((-75)^{o}) & .8 = \mathrm{Cot}\left(-\frac{17\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 1 - 2\,\mathrm{Sin}(15^{o})^2 & .2 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - 1 \\ .3 = \mathrm{Sin}(30^{o})\,\mathrm{Cos}(15^{o}) + \mathrm{Cos}(30^{o})\,\mathrm{Sin}(15^{o}) & .4 = \mathrm{Cos}\left(\frac{7\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{36}\right) + \mathrm{Sin}\left(\frac{7\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{36}\right) \\ .5 = 2\,\mathrm{Sin}(22.5^{o})\,\mathrm{Cos}(22.5^{o}) & .6 = \frac{\mathrm{Tan}(72^{o}) - \mathrm{Tan}(12^{o})}{1 + \mathrm{Tan}(72^{o})\,\mathrm{Tan}(12^{o})} \\ .7 = \frac{\mathrm{Tan}\left(\frac{\pi}{18}\right) + \mathrm{Tan}\left(\frac{\pi}{9}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{18}\right)\mathrm{Tan}\left(\frac{\pi}{9}\right)} & .8 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^2} \\ .9 = \mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{12}\right)^2 & .10 = \mathrm{Cos}\left(\frac{5\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) - \mathrm{Sin}\left(\frac{5\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{5}{6}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-3}{4}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{3}{4}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{1}{5}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(38^{o}) = 0.788), Question = \mathrm{Cos}(19^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(16^{o}) = 0.961), Question = \mathrm{Sin}(8^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645109

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{5\pi}{12}\right) & .2 = \mathrm{Sin}(15^{o}) \\ .3 = \mathrm{Tan}(105^{o}) & .4 = \mathrm{Csc}\left(-\frac{23\pi}{12}\right) \\ .5 = \mathrm{Tan}(345^{o}) & .6 = \mathrm{Sin}((-105)^{o}) \\ .7 = \mathrm{Sec}\left(\frac{19\pi}{12}\right) & .8 = \mathrm{Cot}((-165)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^2 & .2 = \frac{\mathrm{Tan}(20^{o}) + \mathrm{Tan}(40^{o})}{1 - \mathrm{Tan}(20^{o})\,\mathrm{Tan}(40^{o})} \\ .3 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^2} & .4 = 2\,\mathrm{Cos}(22.5^{o})^2 - 1 \\ .5 = \mathrm{Cos}(57^{o})\,\mathrm{Cos}(12^{o}) + \mathrm{Sin}(57^{o})\,\mathrm{Sin}(12^{o}) & .6 = \mathrm{Cos}(75^{o})\,\mathrm{Cos}(15^{o}) - \mathrm{Sin}(75^{o})\,\mathrm{Sin}(15^{o}) \\ .7 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) & .8 = \mathrm{Cos}(15^{o})^2 - \mathrm{Sin}(15^{o})^2 \\ .9 = \frac{\mathrm{Tan}\left(\frac{17\pi}{36}\right) - \mathrm{Tan}\left(\frac{5\pi}{36}\right)}{1 + \mathrm{Tan}\left(\frac{17\pi}{36}\right)\mathrm{Tan}\left(\frac{5\pi}{36}\right)} & .10 = \mathrm{Sin}\left(\frac{11\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) - \mathrm{Cos}\left(\frac{11\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, \mathrm{D} = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{2}{7}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-3}{7}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\end{bmatrix} \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-1}{3}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-4}{5}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Sin}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\end{bmatrix} \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(12^{o}) = 0.978), Question = \mathrm{Sin}(6^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(78^{o}) = 0.208), Question = \mathrm{Cos}(39^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.645110

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{5\pi}{12}\right) & .2 = \mathrm{Cos}(105^o) \\ .3 = \mathrm{Tan}(15^o) & .4 = \mathrm{Sec}((-75)^o) \\ .5 = \mathrm{Csc}\left(\frac{13\pi}{12}\right) & .6 = \mathrm{Tan}(255^o) \\ .7 = \mathrm{Cos}\left(\frac{19\pi}{12}\right) & .8 = \mathrm{Cot}\left(\frac{23\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{5\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) - \mathrm{Sin}\left(\frac{5\pi}{12}\right)\mathrm{Sin}\left(\frac{\pi}{12}\right) & .2 = 1 - 2\,\mathrm{Sin}(22.5^o)^2 \\ .3 = \dfrac{\mathrm{Tan}\left(\frac{\pi}{10}\right) + \mathrm{Tan}\left(\frac{\pi}{15}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{10}\right)\mathrm{Tan}\left(\frac{\pi}{15}\right)} & .4 = \mathrm{Sin}(80^o)\,\mathrm{Cos}(20^o) - \mathrm{Cos}(80^o)\,\mathrm{Sin}(20^o) \\ .5 = \mathrm{Sin}(30^o)\,\mathrm{Cos}(15^o) + \mathrm{Cos}(30^o)\,\mathrm{Sin}(15^o) & .6 = 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)\mathrm{Cos}\left(\frac{\pi}{8}\right) \\ .7 = \dfrac{\mathrm{Tan}(40^o) - \mathrm{Tan}(10^o)}{1 + \mathrm{Tan}(40^o)\,\mathrm{Tan}(10^o)} & .8 = \dfrac{2\,\mathrm{Tan}(15^o)}{1 - \mathrm{Tan}(15^o)^2} \\ .9 = 2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - 1 & .10 = \mathrm{Cos}(15^o)^2 - \mathrm{Sin}(15^o)^2 \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{1}{4}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-3}{4}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{4}{9}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{1}{3}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(10^o) = 0.985), Question = \mathrm{Sin}(5^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(68^o) = 0.375), Question = \mathrm{Cos}(34^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.645111

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}(75^o) & .2 = \mathrm{Cos}\left(\frac{\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{7\pi}{12}\right) & .4 = \mathrm{Csc}\left(-\frac{17\pi}{12}\right) \\ .5 = \mathrm{Cos}((-285)^o) & .6 = \mathrm{Tan}((-195)^o) \\ .7 = \mathrm{Sin}\left(\frac{17\pi}{12}\right) & .8 = \mathrm{Sec}((-15)^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - 1 & .2 = 1 - 2\,\mathrm{Sin}(22.5^o)^2 \\ .3 = \mathrm{Sin}(70^o)\,\mathrm{Cos}(10^o) - \mathrm{Cos}(70^o)\,\mathrm{Sin}(10^o) & .4 = \mathrm{Sin}\left(\frac{7\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) + \mathrm{Cos}\left(\frac{7\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) \\ .5 = \frac{\mathrm{Tan}(55^o) - \mathrm{Tan}(10^o)}{1 + \mathrm{Tan}(55^o)\,\mathrm{Tan}(10^o)} & .6 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) \\ .7 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^2} & .8 = \mathrm{Cos}(15^o)^2 - \mathrm{Sin}(15^o)^2 \\ .9 = \mathrm{Cos}(12^o)\,\mathrm{Cos}(18^o) - \mathrm{Sin}(12^o)\,\mathrm{Sin}(18^o) & .10 = \frac{\mathrm{Tan}\left(\frac{4\pi}{15}\right) + \mathrm{Tan}\left(\frac{\pi}{15}\right)}{1 - \mathrm{Tan}\left(\frac{4\pi}{15}\right)\mathrm{Tan}\left(\frac{\pi}{15}\right)} \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{1}{3}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-4}{9}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{\pi}{2}, B = \pi, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-1}{2}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-4}{5}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Sin}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(46^o) = 0.695), Question = \mathrm{Sin}(23^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(86^o) = 0.070), Question = \mathrm{Cos}(43^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.645112

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Sin}(105^{o}) \\ .3 = \mathrm{Tan}\left(\frac{5\pi}{12}\right) & .4 = \mathrm{Csc}\left(\frac{23\pi}{12}\right) \\ .5 = \mathrm{Sin}(195^{o}) & .6 = \mathrm{Cos}\left(-\frac{23\pi}{12}\right) \\ .7 = \mathrm{Cot}(285^{o}) & .8 = \mathrm{Sec}((-105)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - 1 & .2 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^2} \\ .3 = 2\,\mathrm{Sin}(22.5^{o})\,\mathrm{Cos}(22.5^{o}) & .4 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^2 \\ .5 = \frac{\mathrm{Tan}\left(\frac{5\pi}{18}\right) - \mathrm{Tan}\left(\frac{\pi}{9}\right)}{1 + \mathrm{Tan}\left(\frac{5\pi}{18}\right)\mathrm{Tan}\left(\frac{\pi}{9}\right)} & .6 = \mathrm{Cos}(20^{o})\,\mathrm{Cos}(25^{o}) - \mathrm{Sin}(20^{o})\,\mathrm{Sin}(25^{o}) \\ .7 = \mathrm{Cos}(15^{o})^2 - \mathrm{Sin}(15^{o})^2 & .8 = \mathrm{Cos}(72^{o})\,\mathrm{Cos}(12^{o}) + \mathrm{Sin}(72^{o})\,\mathrm{Sin}(12^{o}) \\ .9 = \mathrm{Sin}\left(\frac{4\pi}{9}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) + \mathrm{Cos}\left(\frac{4\pi}{9}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .10 = \mathrm{Sin}(105^{o})\,\mathrm{Cos}(15^{o}) - \mathrm{Cos}(105^{o})\,\mathrm{Sin}(15^{o}) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{1}{2}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{1}{3}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-1}{6}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{1}{2}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(18^{o}) = 0.951), Question = \mathrm{Cos}(9^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(46^{o}) = 0.695), Question = \mathrm{Sin}(23^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645113

$$No1 = \begin{bmatrix} .1 = \text{Sin}(75^\circ) & .2 = \text{Cos}\left(\frac{\pi}{12}\right) \\ .3 = \text{Tan}(105^\circ) & .4 = \text{Tan}(165^\circ) \\ .5 = \text{Sin}\left(-\frac{7\pi}{12}\right) & .6 = \text{Cos}((-345)^\circ) \\ .7 = \text{Cot}\left(-\frac{5\pi}{12}\right) & .8 = \text{Csc}((-165)^\circ) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\text{Cos}\left(\frac{\pi}{12}\right)^2 - 1 & .2 = \frac{2\,\text{Tan}\left(\frac{\pi}{12}\right)}{1 - \text{Tan}\left(\frac{\pi}{12}\right)^2} \\ .3 = 2\,\text{Sin}(15^\circ)\,\text{Cos}(15^\circ) & .4 = \text{Cos}\left(\frac{11\pi}{60}\right)\text{Cos}\left(\frac{\pi}{15}\right) - \text{Sin}\left(\frac{11\pi}{60}\right)\text{Sin}\left(\frac{\pi}{15}\right) \\ .5 = 1 - 2\,\text{Sin}(22.5^\circ)^2 & .6 = \text{Cos}\left(\frac{\pi}{8}\right)^2 - \text{Sin}\left(\frac{\pi}{8}\right)^2 \\ .7 = \frac{\text{Tan}\left(\frac{17\pi}{36}\right) - \text{Tan}\left(\frac{5\pi}{36}\right)}{1 + \text{Tan}\left(\frac{17\pi}{36}\right)\text{Tan}\left(\frac{5\pi}{36}\right)} & .8 = \text{Cos}(60^\circ)\,\text{Cos}(15^\circ) + \text{Sin}(60^\circ)\,\text{Sin}(15^\circ) \\ .9 = \frac{\text{Tan}(20^\circ) + \text{Tan}(40^\circ)}{1 - \text{Tan}(20^\circ)\,\text{Tan}(40^\circ)} & .10 = \text{Sin}\left(\frac{2\pi}{9}\right)\text{Cos}\left(\frac{\pi}{18}\right) - \text{Cos}\left(\frac{2\pi}{9}\right)\text{Sin}\left(\frac{\pi}{18}\right) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, \text{D} = \pi\right] \\ \left[Cond1 = \left(\text{Sin}(\alpha) = \frac{1}{2}\right), Cond2 = \left(\text{Cos}(\beta) = \frac{-4}{7}\right)\right] \\ \left[\begin{bmatrix} .1 = \text{Cos}(\alpha) & .2 = \text{Sin}(\beta) \\ .3 = \text{Tan}(\alpha) & .4 = \text{Sin}(\alpha - \beta) \\ .5 = \text{Cos}(\beta - \alpha) & .6 = \text{Tan}(\alpha + \beta) \\ .7 = \text{Cos}(2\beta) & .8 = \text{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{3\pi}{2}, \text{D} = 2\pi\right] \\ \left[Cond1 = \left(\text{Cos}(\alpha) = \frac{-1}{5}\right), Cond2 = \left(\text{Sin}(\beta) = \frac{-2}{5}\right)\right] \\ \left[\begin{bmatrix} .1 = \text{Sin}(\alpha) & .2 = \text{Cos}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\alpha + \beta) \\ .5 = \text{Cos}(\alpha - \beta) & .6 = \text{Tan}(\beta - \alpha) \\ .7 = \text{Sin}(2\alpha) & .8 = \text{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\text{Cos}(46^\circ) = 0.695),\ Question = \text{Sin}(23^\circ)\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\text{Cos}(14^\circ) = 0.970),\ Question = \text{Cos}(7^\circ)\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645114

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{5\pi}{12}\right) & .2 = \mathrm{Cos}(15^{\circ}) \\ .3 = \mathrm{Tan}\left(\frac{7\pi}{12}\right) & .4 = \mathrm{Sec}\left(-\frac{17\pi}{12}\right) \\ .5 = \mathrm{Cos}(165^{\circ}) & .6 = \mathrm{Csc}(255^{\circ}) \\ .7 = \mathrm{Cot}\left(\frac{19\pi}{12}\right) & .8 = \mathrm{Tan}\left(-\frac{13\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\mathrm{Cos}(22.5^{\circ})^2 - 1 & .2 = \mathrm{Sin}(50^{\circ})\,\mathrm{Cos}(20^{\circ}) - \mathrm{Cos}(50^{\circ})\,\mathrm{Sin}(20^{\circ}) \\ .3 = \dfrac{\mathrm{Tan}\left(\frac{\pi}{18}\right) + \mathrm{Tan}\left(\frac{7\pi}{36}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{18}\right)\mathrm{Tan}\left(\frac{7\pi}{36}\right)} & .4 = \mathrm{Cos}\left(\frac{\pi}{15}\right)\mathrm{Cos}\left(\frac{4\pi}{15}\right) - \mathrm{Sin}\left(\frac{\pi}{15}\right)\mathrm{Sin}\left(\frac{4\pi}{15}\right) \\ .5 = \mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{12}\right)^2 & .6 = 2\,\mathrm{Sin}(15^{\circ})\,\mathrm{Cos}(15^{\circ}) \\ .7 = \dfrac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^2} & .8 = \dfrac{\mathrm{Tan}(60^{\circ}) - \mathrm{Tan}(15^{\circ})}{1 + \mathrm{Tan}(60^{\circ})\,\mathrm{Tan}(15^{\circ})} \\ .9 = \mathrm{Sin}(80^{\circ})\,\mathrm{Cos}(10^{\circ}) + \mathrm{Cos}(80^{\circ})\,\mathrm{Sin}(10^{\circ}) & .10 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^2 \end{bmatrix}, , \begin{bmatrix} \frac{:)}{:(} \\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, \mathrm{D} = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{1}{2}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-3}{4}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\end{bmatrix} \end{bmatrix}, , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{1}{2}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{1}{4}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\end{bmatrix} \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(72^{\circ}) = 0.309), Question = \mathrm{Sin}(36^{\circ})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(32^{\circ}) = 0.848), Question = \mathrm{Cos}(16^{\circ})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645115

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) & .2 = \mathrm{Cos}(15^\circ) \\ .3 = \mathrm{Tan}\left(\frac{5\pi}{12}\right) & .4 = \mathrm{Sin}(285^\circ) \\ .5 = \mathrm{Cos}\left(-\frac{7\pi}{12}\right) & .6 = \mathrm{Tan}\left(-\frac{\pi}{12}\right) \\ .7 = \mathrm{Csc}(165^\circ) & .8 = \mathrm{Cot}(345^\circ) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \dfrac{\mathrm{Tan}\left(\frac{5\pi}{18}\right) + \mathrm{Tan}\left(\frac{\pi}{18}\right)}{1 - \mathrm{Tan}\left(\frac{5\pi}{18}\right)\mathrm{Tan}\left(\frac{\pi}{18}\right)} & .2 = 1 - 2\,\mathrm{Sin}(15^\circ)^2 \\ .3 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) & .4 = \mathrm{Cos}\left(\frac{19\pi}{60}\right)\mathrm{Cos}\left(\frac{\pi}{15}\right) + \mathrm{Sin}\left(\frac{19\pi}{60}\right)\mathrm{Sin}\left(\frac{\pi}{15}\right) \\ .5 = \mathrm{Cos}(22.5^\circ)^2 - \mathrm{Sin}(22.5^\circ)^2 & .6 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - 1 \\ .7 = \dfrac{2\,\mathrm{Tan}(15^\circ)}{1 - \mathrm{Tan}(15^\circ)^2} & .8 = \dfrac{\mathrm{Tan}(80^\circ) - \mathrm{Tan}(20^\circ)}{1 + \mathrm{Tan}(80^\circ)\mathrm{Tan}(20^\circ)} \\ .9 = \mathrm{Cos}\left(\frac{5\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) - \mathrm{Sin}\left(\frac{5\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) & .10 = \mathrm{Sin}(70^\circ)\mathrm{Cos}(20^\circ) + \mathrm{Cos}(70^\circ)\mathrm{Sin}(20^\circ) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{2}{7}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-4}{9}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\end{bmatrix} \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-3}{7}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-4}{7}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\end{bmatrix} \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(62^\circ) = 0.469), Question = \mathrm{Cos}(31^\circ)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(8^\circ) = 0.990), Question = \mathrm{Sin}(4^\circ)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645116

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}(15^{o}) & .2 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{5\pi}{12}\right) & .4 = \mathrm{Sin}\left(\frac{13\pi}{12}\right) \\ .5 = \mathrm{Tan}(165^{o}) & .6 = \mathrm{Csc}\left(-\frac{23\pi}{12}\right) \\ .7 = \mathrm{Cos}((-15)^{o}) & .8 = \mathrm{Sec}((-195)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^2 & .2 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) \\ .3 = \mathrm{Sin}(85^{o})\,\mathrm{Cos}(25^{o}) - \mathrm{Cos}(85^{o})\,\mathrm{Sin}(25^{o}) & .4 = \mathrm{Cos}\left(\frac{5\pi}{9}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) + \mathrm{Sin}\left(\frac{5\pi}{9}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) \\ .5 = \mathrm{Cos}\left(\frac{5\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) - \mathrm{Sin}\left(\frac{5\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) & .6 = \mathrm{Sin}(70^{o})\,\mathrm{Cos}(20^{o}) + \mathrm{Cos}(70^{o})\,\mathrm{Sin}(20^{o}) \\ .7 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^2} & .8 = \frac{\mathrm{Tan}\left(\frac{5\pi}{36}\right) + \mathrm{Tan}\left(\frac{\pi}{36}\right)}{1 - \mathrm{Tan}\left(\frac{5\pi}{36}\right)\mathrm{Tan}\left(\frac{\pi}{36}\right)} \\ .9 = \mathrm{Cos}(15^{o})^2 - \mathrm{Sin}(15^{o})^2 & .10 = 2\,\mathrm{Cos}(22.5^{o})^2 - 1 \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, \mathrm{D} = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{5}{8}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-2}{3}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{\pi}{2}, B = \pi, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{1}{6}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{1}{2}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(10^{o}) = 0.985), Question = \mathrm{Sin}(5^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(46^{o}) = 0.695), Question = \mathrm{Cos}(23^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.645117

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}(105^{o}) & .2 = \mathrm{Sin}\left(\frac{\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{5\pi}{12}\right) & .4 = \mathrm{Sin}((-165)^{o}) \\ .5 = \mathrm{Tan}\left(-\frac{19\pi}{12}\right) & .6 = \mathrm{Cot}\left(\frac{13\pi}{12}\right) \\ .7 = \mathrm{Cos}((-105)^{o}) & .8 = \mathrm{Sec}((-345)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Sin}(25^{o})\,\mathrm{Cos}(35^{o}) + \mathrm{Cos}(25^{o})\,\mathrm{Sin}(35^{o}) & .2 = \mathrm{Cos}\left(\frac{\pi}{36}\right)\mathrm{Cos}\left(\frac{5\pi}{36}\right) - \mathrm{Sin}\left(\frac{\pi}{36}\right)\mathrm{Sin}\left(\frac{5\pi}{36}\right) \\ .3 = \mathrm{Cos}(22.5^{o})^{2} - \mathrm{Sin}(22.5^{o})^{2} & .4 = \frac{\mathrm{Tan}\left(\frac{\pi}{9}\right) + \mathrm{Tan}\left(\frac{5\pi}{36}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{9}\right)\mathrm{Tan}\left(\frac{5\pi}{36}\right)} \\ .5 = \mathrm{Sin}(57^{o})\,\mathrm{Cos}(12^{o}) - \mathrm{Cos}(57^{o})\,\mathrm{Sin}(12^{o}) & .6 = 1 - 2\,\mathrm{Sin}(15^{o})^{2} \\ .7 = 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)\mathrm{Cos}\left(\frac{\pi}{8}\right) & .8 = \mathrm{Cos}\left(\frac{7\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) + \mathrm{Sin}\left(\frac{7\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) \\ .9 = 2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^{2} - 1 & .10 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^{2}} \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{3}{8}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-4}{7}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-1}{2}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-3}{7}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(58^{o}) = 0.530), Question = \mathrm{Sin}(29^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(86^{o}) = 0.070), Question = \mathrm{Cos}(43^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645118

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Cos}(105^{o}) \\ .3 = \mathrm{Tan}\left(\frac{5\pi}{12}\right) & .4 = \mathrm{Cot}((-105)^{o}) \\ .5 = \mathrm{Cos}\left(\frac{11\pi}{12}\right) & .6 = \mathrm{Tan}\left(-\frac{17\pi}{12}\right) \\ .7 = \mathrm{Sin}((-165)^{o}) & .8 = \mathrm{Sec}\left(\frac{13\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{\mathrm{Tan}(35^{o}) + \mathrm{Tan}(25^{o})}{1 - \mathrm{Tan}(35^{o})\,\mathrm{Tan}(25^{o})} & .2 = \mathrm{Sin}\left(\frac{11\pi}{60}\right)\mathrm{Cos}\left(\frac{\pi}{15}\right) + \mathrm{Cos}\left(\frac{11\pi}{60}\right)\mathrm{Sin}\left(\frac{\pi}{15}\right) \\ .3 = 2\,\mathrm{Cos}(15^{o})^{2} - 1 & .4 = \mathrm{Cos}\left(\frac{\pi}{8}\right)^{2} - \mathrm{Sin}\left(\frac{\pi}{8}\right)^{2} \\ .5 = \frac{\mathrm{Tan}\left(\frac{13\pi}{36}\right) - \mathrm{Tan}\left(\frac{\pi}{9}\right)}{1 + \mathrm{Tan}\left(\frac{13\pi}{36}\right)\mathrm{Tan}\left(\frac{\pi}{9}\right)} & .6 = 1 - 2\,\mathrm{Sin}(22.5^{o})^{2} \\ .7 = \frac{2\,\mathrm{Tan}(22.5^{o})}{1 - \mathrm{Tan}(22.5^{o})^{2}} & .8 = \mathrm{Sin}\left(\frac{7\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) - \mathrm{Cos}\left(\frac{7\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) \\ .9 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) & .10 = \mathrm{Cos}(105^{o})\,\mathrm{Cos}(15^{o}) + \mathrm{Sin}(105^{o})\,\mathrm{Sin}(15^{o}) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{1}{2}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-5}{8}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\end{bmatrix} \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-1}{3}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-3}{4}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\beta - \alpha) \\ .7 = \mathrm{Sin}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\end{bmatrix} \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(40^{o}) = 0.766), Question = \mathrm{Cos}(20^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(62^{o}) = 0.469), Question = \mathrm{Sin}(31^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.645119

$$No1 = \begin{bmatrix} .1 = \text{Sin}(105^o) & .2 = \text{Cos}\left(\frac{5\pi}{12}\right) \\ .3 = \text{Tan}\left(\frac{\pi}{12}\right) & .4 = \text{Cot}((-105)^o) \\ .5 = \text{Sin}\left(-\frac{17\pi}{12}\right) & .6 = \text{Csc}\left(\frac{17\pi}{12}\right) \\ .7 = \text{Sec}(285^o) & .8 = \text{Cos}(345^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \text{Sin}\left(\frac{2\pi}{5}\right)\text{Cos}\left(\frac{\pi}{15}\right) - \text{Cos}\left(\frac{2\pi}{5}\right)\text{Sin}\left(\frac{\pi}{15}\right) & .2 = 1 - 2\,\text{Sin}(22.5^o)^2 \\ .3 = \text{Cos}\left(\frac{\pi}{12}\right)^2 - \text{Sin}\left(\frac{\pi}{12}\right)^2 & .4 = \frac{\text{Tan}(55^o) - \text{Tan}(10^o)}{1 + \text{Tan}(55^o)\,\text{Tan}(10^o)} \\ .5 = \text{Cos}\left(\frac{11\pi}{18}\right)\text{Cos}\left(\frac{\pi}{9}\right) + \text{Sin}\left(\frac{11\pi}{18}\right)\text{Sin}\left(\frac{\pi}{9}\right) & .6 = \frac{2\,\text{Tan}\left(\frac{\pi}{12}\right)}{1 - \text{Tan}\left(\frac{\pi}{12}\right)^2} \\ .7 = 2\,\text{Sin}(15^o)\,\text{Cos}(15^o) & .8 = 2\,\text{Cos}\left(\frac{\pi}{8}\right)^2 - 1 \\ .9 = \frac{\text{Tan}(15^o) + \text{Tan}(30^o)}{1 - \text{Tan}(15^o)\,\text{Tan}(30^o)} & .10 = \text{Sin}(20^o)\,\text{Cos}(40^o) + \text{Cos}(20^o)\,\text{Sin}(40^o) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\text{Cos}(\alpha) = \frac{5}{9}\right), Cond2 = \left(\text{Sin}(\beta) = \frac{-2}{3}\right)\right] \\ \left[\left[\begin{matrix} .1 = \text{Sin}(\alpha) & .2 = \text{Cos}(\beta) \\ .3 = \text{Tan}(\alpha) & .4 = \text{Sin}(\alpha + \beta) \\ .5 = \text{Cos}(\beta - \alpha) & .6 = \text{Tan}(\alpha - \beta) \\ .7 = \text{Cos}(2\beta) & .8 = \text{Tan}(2\alpha) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\text{Cos}(\alpha) = \frac{1}{5}\right), Cond2 = \left(\text{Sin}(\beta) = \frac{1}{6}\right)\right] \\ \left[\left[\begin{matrix} .1 = \text{Sin}(\alpha) & .2 = \text{Cos}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\beta - \alpha) \\ .5 = \text{Cos}(\alpha - \beta) & .6 = \text{Tan}(\alpha + \beta) \\ .7 = \text{Cos}(2\alpha) & .8 = \text{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\text{Cos}(84^o) = 0.105), Question = \text{Sin}(42^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\text{Cos}(32^o) = 0.848), Question = \text{Cos}(16^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.645120

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}(15^{o}) & .2 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) \\ .3 = \mathrm{Tan}(75^{o}) & .4 = \mathrm{Cot}\left(\frac{13\pi}{12}\right) \\ .5 = \mathrm{Tan}((-345)^{o}) & .6 = \mathrm{Sin}\left(-\frac{13\pi}{12}\right) \\ .7 = \mathrm{Cos}((-75)^{o}) & .8 = \mathrm{Csc}\left(-\frac{17\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{7\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) + \mathrm{Cos}\left(\frac{7\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .2 = \frac{\mathrm{Tan}\left(\frac{5\pi}{36}\right) + \mathrm{Tan}\left(\frac{\pi}{36}\right)}{1 - \mathrm{Tan}\left(\frac{5\pi}{36}\right)\mathrm{Tan}\left(\frac{\pi}{36}\right)} \\ .3 = 2\,\mathrm{Cos}(15^{o})^{2} - 1 & .4 = \frac{\mathrm{Tan}\left(\frac{4\pi}{9}\right) - \mathrm{Tan}\left(\frac{\pi}{9}\right)}{1 + \mathrm{Tan}\left(\frac{4\pi}{9}\right)\mathrm{Tan}\left(\frac{\pi}{9}\right)} \\ .5 = \mathrm{Cos}(40^{o})\mathrm{Cos}(10^{o}) + \mathrm{Sin}(40^{o})\mathrm{Sin}(10^{o}) & .6 = \mathrm{Cos}(12^{o})\mathrm{Cos}(48^{o}) - \mathrm{Sin}(12^{o})\mathrm{Sin}(48^{o}) \\ .7 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) & .8 = \mathrm{Cos}(22.5^{o})^{2} - \mathrm{Sin}(22.5^{o})^{2} \\ .9 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^{2} & .10 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^{2}} \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, \mathrm{D} = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{2}{7}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-5}{6}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\end{bmatrix} \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-1}{5}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-1}{3}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\end{bmatrix} \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(46^{o}) = 0.695), Question = \mathrm{Sin}(23^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(76^{o}) = 0.242), Question = \mathrm{Cos}(38^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645121

$$No1 = \begin{bmatrix} .1 = \text{Sin}\left(\frac{\pi}{12}\right) & .2 = \text{Cos}(105^{o}) \\ .3 = \text{Tan}(75^{o}) & .4 = \text{Tan}((-255)^{o}) \\ .5 = \text{Sec}\left(-\frac{5\pi}{12}\right) & .6 = \text{Sin}((-195)^{o}) \\ .7 = \text{Cot}\left(-\frac{\pi}{12}\right) & .8 = \text{Cos}\left(\frac{11\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\text{Sin}\left(\frac{\pi}{8}\right)\text{Cos}\left(\frac{\pi}{8}\right) & .2 = \frac{2\,\text{Tan}(22.5^{o})}{1-\text{Tan}(22.5^{o})^{2}} \\ .3 = \text{Cos}\left(\frac{\pi}{36}\right)\text{Cos}\left(\frac{5\pi}{36}\right) - \text{Sin}\left(\frac{\pi}{36}\right)\text{Sin}\left(\frac{5\pi}{36}\right) & .4 = \text{Sin}\left(\frac{17\pi}{30}\right)\text{Cos}\left(\frac{\pi}{15}\right) - \text{Cos}\left(\frac{17\pi}{30}\right)\text{Sin}\left(\frac{\pi}{15}\right) \\ .5 = \frac{\text{Tan}(35^{o}) + \text{Tan}(25^{o})}{1 - \text{Tan}(35^{o})\,\text{Tan}(25^{o})} & .6 = \frac{\text{Tan}(65^{o}) - \text{Tan}(20^{o})}{1 + \text{Tan}(65^{o})\,\text{Tan}(20^{o})} \\ .7 = 1 - 2\,\text{Sin}(15^{o})^{2} & .8 = \text{Cos}\left(\frac{\pi}{12}\right)^{2} - \text{Sin}\left(\frac{\pi}{12}\right)^{2} \\ .9 = \text{Sin}(10^{o})\,\text{Cos}(35^{o}) + \text{Cos}(10^{o})\,\text{Sin}(35^{o}) & .10 = 2\,\text{Cos}(22.5^{o})^{2} - 1 \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\right] \\ \& \\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, \text{D} = 2\pi\right] \\ \left[Cond1 = \left(\text{Cos}(\alpha) = \frac{4}{7}\right), Cond2 = \left(\text{Sin}(\beta) = \frac{-1}{2}\right)\right] \\ \left[\begin{bmatrix} .1 = \text{Sin}(\alpha) & .2 = \text{Cos}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\beta - \alpha) \\ .5 = \text{Cos}(\alpha - \beta) & .6 = \text{Tan}(\alpha + \beta) \\ .7 = \text{Sin}(2\alpha) & .8 = \text{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{\pi}{2}, B = \pi, C = \pi, \text{D} = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\text{Cos}(\alpha) = \frac{-1}{3}\right), Cond2 = \left(\text{Sin}(\beta) = \frac{-1}{6}\right)\right] \\ \left[\begin{bmatrix} .1 = \text{Sin}(\alpha) & .2 = \text{Cos}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\alpha - \beta) \\ .5 = \text{Cos}(\alpha + \beta) & .6 = \text{Tan}(\beta - \alpha) \\ .7 = \text{Sin}(2\alpha) & .8 = \text{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\text{Cos}(86^{o}) = 0.070),\ Question = \text{Cos}(43^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\text{Cos}(50^{o}) = 0.643),\ Question = \text{Sin}(25^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.645122

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) & .2 = \mathrm{Cos}(75^{o}) \\ .3 = \mathrm{Tan}\left(\frac{\pi}{12}\right) & .4 = \mathrm{Sin}((-75)^{o}) \\ .5 = \mathrm{Sec}\left(-\frac{19\pi}{12}\right) & .6 = \mathrm{Tan}\left(\frac{19\pi}{12}\right) \\ .7 = \mathrm{Cos}((-15)^{o}) & .8 = \mathrm{Cot}((-345)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{7\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) + \mathrm{Cos}\left(\frac{7\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .2 = 1 - 2\,\mathrm{Sin}(22.5^{o})^{2} \\ .3 = 2\,\mathrm{Cos}(15^{o})^{2} - 1 & .4 = \dfrac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^{2}} \\ .5 = \mathrm{Cos}(40^{o})\mathrm{Cos}(20^{o}) - \mathrm{Sin}(40^{o})\mathrm{Sin}(20^{o}) & .6 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) \\ .7 = \mathrm{Sin}\left(\frac{17\pi}{30}\right)\mathrm{Cos}\left(\frac{\pi}{15}\right) - \mathrm{Cos}\left(\frac{17\pi}{30}\right)\mathrm{Sin}\left(\frac{\pi}{15}\right) & .8 = \dfrac{\mathrm{Tan}\left(\frac{7\pi}{36}\right) - \mathrm{Tan}\left(\frac{\pi}{36}\right)}{1 + \mathrm{Tan}\left(\frac{7\pi}{36}\right)\mathrm{Tan}\left(\frac{\pi}{36}\right)} \\ .9 = \mathrm{Cos}\left(\frac{\pi}{8}\right)^{2} - \mathrm{Sin}\left(\frac{\pi}{8}\right)^{2} & .10 = \dfrac{\mathrm{Tan}(10^{o}) + \mathrm{Tan}(20^{o})}{1 - \mathrm{Tan}(10^{o})\mathrm{Tan}(20^{o})} \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{4}{5}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{5}{7}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-1}{2}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-2}{3}\right)\right] \\ \left[\left[\begin{matrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Sin}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(58^{o}) = 0.530), Question = \mathrm{Sin}(29^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(84^{o}) = 0.105), Question = \mathrm{Cos}(42^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645123

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}(75^{o}) & .2 = \mathrm{Cos}\left(\frac{7\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{\pi}{12}\right) & .4 = \mathrm{Cot}\left(\frac{19\pi}{12}\right) \\ .5 = \mathrm{Tan}(165^{o}) & .6 = \mathrm{Sec}((-75)^{o}) \\ .7 = \mathrm{Csc}\left(-\frac{11\pi}{12}\right) & .8 = \mathrm{Cos}\left(-\frac{23\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{12}\right)^2 & .2 = \mathrm{Sin}(25^{o})\,\mathrm{Cos}(20^{o}) + \mathrm{Cos}(25^{o})\,\mathrm{Sin}(20^{o}) \\ .3 = \mathrm{Cos}\left(\frac{\pi}{36}\right)\mathrm{Cos}\left(\frac{5\pi}{36}\right) - \mathrm{Sin}\left(\frac{\pi}{36}\right)\mathrm{Sin}\left(\frac{5\pi}{36}\right) & .4 = \frac{\mathrm{Tan}\left(\frac{\pi}{9}\right) + \mathrm{Tan}\left(\frac{2\pi}{9}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{9}\right)\mathrm{Tan}\left(\frac{2\pi}{9}\right)} \\ .5 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^2} & .6 = \frac{\mathrm{Tan}\left(\frac{5\pi}{18}\right) - \mathrm{Tan}\left(\frac{\pi}{9}\right)}{1 + \mathrm{Tan}\left(\frac{5\pi}{18}\right)\mathrm{Tan}\left(\frac{\pi}{9}\right)} \\ .7 = \mathrm{Cos}(85^{o})\,\mathrm{Cos}(25^{o}) + \mathrm{Sin}(85^{o})\,\mathrm{Sin}(25^{o}) & .8 = 1 - 2\,\mathrm{Sin}(15^{o})^2 \\ .9 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - 1 & .10 = 2\,\mathrm{Sin}(22.5^{o})\,\mathrm{Cos}(22.5^{o}) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, \mathrm{D} = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{5}{7}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-3}{4}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha - \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{\pi}{2}, B = \pi, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-1}{2}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-1}{3}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Sin}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(58^{o}) = 0.530), Question = \mathrm{Sin}(29^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(8^{o}) = 0.990), Question = \mathrm{Cos}(4^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.645124

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}(105^\circ) & .2 = \mathrm{Sin}\left(\frac{5\pi}{12}\right) \\ .3 = \mathrm{Tan}(15^\circ) & .4 = \mathrm{Tan}\left(-\frac{19\pi}{12}\right) \\ .5 = \mathrm{Csc}((-75)^\circ) & .6 = \mathrm{Sin}((-345)^\circ) \\ .7 = \mathrm{Cos}\left(\frac{23\pi}{12}\right) & .8 = \mathrm{Cot}(285^\circ) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{11\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) + \mathrm{Sin}\left(\frac{11\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) & .2 = \mathrm{Cos}\left(\frac{\pi}{6}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) - \mathrm{Sin}\left(\frac{\pi}{6}\right)\mathrm{Sin}\left(\frac{\pi}{12}\right) \\ .3 = 2\,\mathrm{Cos}(15^\circ)^2 - 1 & .4 = \mathrm{Sin}(35^\circ)\mathrm{Cos}(5^\circ) - \mathrm{Cos}(35^\circ)\mathrm{Sin}(5^\circ) \\ .5 = 1 - 2\,\mathrm{Sin}(22.5^\circ)^2 & .6 = \frac{\mathrm{Tan}\left(\frac{5\pi}{36}\right) + \mathrm{Tan}\left(\frac{7\pi}{36}\right)}{1 - \mathrm{Tan}\left(\frac{5\pi}{36}\right)\mathrm{Tan}\left(\frac{7\pi}{36}\right)} \\ .7 = \frac{2\,\mathrm{Tan}(22.5^\circ)}{1 - \mathrm{Tan}(22.5^\circ)^2} & .8 = \frac{\mathrm{Tan}(65^\circ) - \mathrm{Tan}(20^\circ)}{1 + \mathrm{Tan}(65^\circ)\mathrm{Tan}(20^\circ)} \\ .9 = 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)\mathrm{Cos}\left(\frac{\pi}{8}\right) & .10 = \mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{12}\right)^2 \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{4}{7}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-3}{8}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\beta) & .8 = \mathrm{Tan}(2\alpha) \end{bmatrix}\end{bmatrix} \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{\pi}{2}, B = \pi, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{3}{7}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{-1}{2}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\alpha + \beta) \\ .5 = \mathrm{Cos}(\beta - \alpha) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\end{bmatrix} \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(24^\circ) = 0.914), Question = \mathrm{Sin}(12^\circ)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(62^\circ) = 0.469), Question = \mathrm{Cos}(31^\circ)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645125

$$No1 = \begin{bmatrix} .1 = \text{Sin}(75^{o}) & .2 = \text{Cos}\left(\frac{7\pi}{12}\right) \\ .3 = \text{Tan}(15^{o}) & .4 = \text{Cos}((-195)^{o}) \\ .5 = \text{Cot}\left(-\frac{19\pi}{12}\right) & .6 = \text{Csc}\left(-\frac{7\pi}{12}\right) \\ .7 = \text{Sec}((-165)^{o}) & .8 = \text{Sin}(195^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \text{Cos}\left(\frac{2\pi}{9}\right)\text{Cos}\left(\frac{\pi}{18}\right) + \text{Sin}\left(\frac{2\pi}{9}\right)\text{Sin}\left(\frac{\pi}{18}\right) & .2 = \frac{\text{Tan}(12^{o}) + \text{Tan}(33^{o})}{1 - \text{Tan}(12^{o})\,\text{Tan}(33^{o})} \\ .3 = \text{Sin}\left(\frac{\pi}{18}\right)\text{Cos}\left(\frac{\pi}{9}\right) + \text{Cos}\left(\frac{\pi}{18}\right)\text{Sin}\left(\frac{\pi}{9}\right) & .4 = \frac{\text{Tan}(60^{o}) - \text{Tan}(15^{o})}{1 + \text{Tan}(60^{o})\,\text{Tan}(15^{o})} \\ .5 = 1 - 2\,\text{Sin}(15^{o})^{2} & .6 = \frac{2\,\text{Tan}(15^{o})}{1 - \text{Tan}(15^{o})^{2}} \\ .7 = 2\,\text{Cos}(22.5^{o})^{2} - 1 & .8 = \text{Cos}\left(\frac{\pi}{12}\right)^{2} - \text{Sin}\left(\frac{\pi}{12}\right)^{2} \\ .9 = \text{Cos}(35^{o})\,\text{Cos}(25^{o}) - \text{Sin}(35^{o})\,\text{Sin}(25^{o}) & .10 = 2\,\text{Sin}\left(\frac{\pi}{8}\right)\text{Cos}\left(\frac{\pi}{8}\right) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\text{Cos}(\alpha) = \frac{1}{6}\right), Cond2 = \left(\text{Sin}(\beta) = \frac{1}{4}\right)\right] \\ \left[\begin{bmatrix} .1 = \text{Sin}(\alpha) & .2 = \text{Cos}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\alpha + \beta) \\ .5 = \text{Cos}(\beta - \alpha) & .6 = \text{Tan}(\alpha - \beta) \\ .7 = \text{Cos}(2\alpha) & .8 = \text{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\text{Sin}(\alpha) = \frac{-1}{4}\right), Cond2 = \left(\text{Cos}(\beta) = \frac{-1}{2}\right)\right] \\ \left[\begin{bmatrix} .1 = \text{Cos}(\alpha) & .2 = \text{Sin}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\alpha - \beta) \\ .5 = \text{Cos}(\alpha + \beta) & .6 = \text{Tan}(\beta - \alpha) \\ .7 = \text{Cos}(2\beta) & .8 = \text{Tan}(2\alpha) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [\,Cond = (\text{Cos}(32^{o}) = 0.848),\ Question = \text{Cos}(16^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [\,Cond = (\text{Cos}(70^{o}) = 0.342),\ Question = \text{Sin}(35^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.645126

$$No1 = \begin{bmatrix} .1 = \operatorname{Sin}\left(\frac{\pi}{12}\right) & .2 = \operatorname{Cos}(75^{o}) \\ .3 = \operatorname{Tan}(105^{o}) & .4 = \operatorname{Cos}((-255)^{o}) \\ .5 = \operatorname{Sin}\left(\frac{11\pi}{12}\right) & .6 = \operatorname{Csc}((-195)^{o}) \\ .7 = \operatorname{Tan}\left(\frac{13\pi}{12}\right) & .8 = \operatorname{Cot}((-165)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \dfrac{2\operatorname{Tan}\left(\frac{\pi}{12}\right)}{1 - \operatorname{Tan}\left(\frac{\pi}{12}\right)^{2}} & .2 = 1 - 2\operatorname{Sin}(15^{o})^{2} \\ .3 = 2\operatorname{Sin}\left(\frac{\pi}{8}\right)\operatorname{Cos}\left(\frac{\pi}{8}\right) & .4 = \dfrac{\operatorname{Tan}(72^{o}) - \operatorname{Tan}(12^{o})}{1 + \operatorname{Tan}(72^{o})\operatorname{Tan}(12^{o})} \\ .5 = 2\operatorname{Cos}\left(\frac{\pi}{12}\right)^{2} - 1 & .6 = \operatorname{Cos}\left(\frac{7\pi}{36}\right)\operatorname{Cos}\left(\frac{\pi}{18}\right) - \operatorname{Sin}\left(\frac{7\pi}{36}\right)\operatorname{Sin}\left(\frac{\pi}{18}\right) \\ .7 = \operatorname{Cos}\left(\frac{19\pi}{60}\right)\operatorname{Cos}\left(\frac{\pi}{15}\right) + \operatorname{Sin}\left(\frac{19\pi}{60}\right)\operatorname{Sin}\left(\frac{\pi}{15}\right) & .8 = \operatorname{Sin}(5^{o})\operatorname{Cos}(25^{o}) + \operatorname{Cos}(5^{o})\operatorname{Sin}(25^{o}) \\ .9 = \operatorname{Cos}(22.5^{o})^{2} - \operatorname{Sin}(22.5^{o})^{2} & .10 = \operatorname{Sin}\left(\frac{5\pi}{18}\right)\operatorname{Cos}\left(\frac{\pi}{9}\right) - \operatorname{Cos}\left(\frac{5\pi}{18}\right)\operatorname{Sin}\left(\frac{\pi}{9}\right) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\operatorname{Sin}(\alpha) = \frac{4}{5}\right), Cond2 = \left(\operatorname{Cos}(\beta) = \frac{-1}{5}\right)\right] \\ \left[\begin{bmatrix} .1 = \operatorname{Cos}(\alpha) & .2 = \operatorname{Sin}(\beta) \\ .3 = \operatorname{Tan}(\beta) & .4 = \operatorname{Sin}(\beta - \alpha) \\ .5 = \operatorname{Cos}(\alpha - \beta) & .6 = \operatorname{Tan}(\alpha + \beta) \\ .7 = \operatorname{Sin}(2\alpha) & .8 = \operatorname{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\operatorname{Sin}(\alpha) = \frac{-3}{8}\right), Cond2 = \left(\operatorname{Cos}(\beta) = \frac{-1}{4}\right)\right] \\ \left[\begin{bmatrix} .1 = \operatorname{Cos}(\alpha) & .2 = \operatorname{Sin}(\beta) \\ .3 = \operatorname{Tan}(\beta) & .4 = \operatorname{Sin}(\beta - \alpha) \\ .5 = \operatorname{Cos}(\alpha - \beta) & .6 = \operatorname{Tan}(\alpha + \beta) \\ .7 = \operatorname{Cos}(2\alpha) & .8 = \operatorname{Tan}(2\beta) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\operatorname{Cos}(68^{o}) = 0.375), Question = \operatorname{Cos}(34^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\operatorname{Cos}(44^{o}) = 0.719), Question = \operatorname{Sin}(22^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645127

$$No1 = \begin{bmatrix} .1 = \text{Cos}(75^o) & .2 = \text{Sin}\left(\frac{\pi}{12}\right) \\ .3 = \text{Tan}(105^o) & .4 = \text{Tan}\left(-\frac{7\pi}{12}\right) \\ .5 = \text{Cos}(255^o) & .6 = \text{Sin}\left(-\frac{5\pi}{12}\right) \\ .7 = \text{Cot}((-285)^o) & .8 = \text{Sec}((-15)^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \dfrac{\text{Tan}\left(\frac{11\pi}{36}\right) - \text{Tan}\left(\frac{\pi}{18}\right)}{1 + \text{Tan}\left(\frac{11\pi}{36}\right)\text{Tan}\left(\frac{\pi}{18}\right)} & .2 = 1 - 2\,\text{Sin}(15^o)^2 \\ .3 = 2\,\text{Sin}\left(\frac{\pi}{8}\right)\text{Cos}\left(\frac{\pi}{8}\right) & .4 = \dfrac{2\,\text{Tan}(22.5^o)}{1 - \text{Tan}(22.5^o)^2} \\ .5 = \text{Cos}(22.5^o)^2 - \text{Sin}(22.5^o)^2 & .6 = \text{Sin}(72^o)\text{Cos}(12^o) - \text{Cos}(72^o)\text{Sin}(12^o) \\ .7 = \text{Cos}\left(\frac{5\pi}{18}\right)\text{Cos}\left(\frac{\pi}{18}\right) - \text{Sin}\left(\frac{5\pi}{18}\right)\text{Sin}\left(\frac{\pi}{18}\right) & .8 = \dfrac{\text{Tan}\left(\frac{\pi}{15}\right) + \text{Tan}\left(\frac{11\pi}{60}\right)}{1 - \text{Tan}\left(\frac{\pi}{15}\right)\text{Tan}\left(\frac{11\pi}{60}\right)} \\ .9 = \text{Cos}(50^o)\text{Cos}(20^o) + \text{Sin}(50^o)\text{Sin}(20^o) & .10 = 2\,\text{Cos}\left(\frac{\pi}{12}\right)^2 - 1 \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\text{Cos}(\alpha) = \frac{4}{7}\right), Cond2 = \left(\text{Sin}(\beta) = \frac{-4}{5}\right)\right] \\ \left[\left[\begin{matrix} .1 = \text{Sin}(\alpha) & .2 = \text{Cos}(\beta) \\ .3 = \text{Tan}(\alpha) & .4 = \text{Sin}(\beta - \alpha) \\ .5 = \text{Cos}(\alpha + \beta) & .6 = \text{Tan}(\alpha - \beta) \\ .7 = \text{Sin}(2\alpha) & .8 = \text{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\text{Cos}(\alpha) = \frac{3}{7}\right), Cond2 = \left(\text{Sin}(\beta) = \frac{1}{4}\right)\right] \\ \left[\left[\begin{matrix} .1 = \text{Sin}(\alpha) & .2 = \text{Cos}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\alpha + \beta) \\ .5 = \text{Cos}(\alpha - \beta) & .6 = \text{Tan}(\beta - \alpha) \\ .7 = \text{Cos}(2\alpha) & .8 = \text{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\text{Cos}(58^o) = 0.530), Question = \text{Sin}(29^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\text{Cos}(28^o) = 0.883), Question = \text{Cos}(14^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645128

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{5\pi}{12}\right) & .2 = \mathrm{Sin}(15^{o}) \\ .3 = \mathrm{Tan}(105^{o}) & .4 = \mathrm{Cot}((-75)^{o}) \\ .5 = \mathrm{Sec}\left(-\frac{17\pi}{12}\right) & .6 = \mathrm{Tan}((-345)^{o}) \\ .7 = \mathrm{Cos}\left(\frac{19\pi}{12}\right) & .8 = \mathrm{Csc}(195^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Sin}(80^{o})\,\mathrm{Cos}(10^{o}) + \mathrm{Cos}(80^{o})\,\mathrm{Sin}(10^{o}) & .2 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) \\ .3 = \mathrm{Sin}\left(\frac{2\pi}{5}\right)\mathrm{Cos}\left(\frac{\pi}{15}\right) - \mathrm{Cos}\left(\frac{2\pi}{5}\right)\mathrm{Sin}\left(\frac{\pi}{15}\right) & .4 = \mathrm{Cos}(102^{o})\,\mathrm{Cos}(12^{o}) + \mathrm{Sin}(102^{o})\,\mathrm{Sin}(12^{o}) \\ .5 = \frac{\mathrm{Tan}(12^{o}) + \mathrm{Tan}(48^{o})}{1 - \mathrm{Tan}(12^{o})\,\mathrm{Tan}(48^{o})} & .6 = \frac{\mathrm{Tan}\left(\frac{5\pi}{18}\right) - \mathrm{Tan}\left(\frac{\pi}{9}\right)}{1 + \mathrm{Tan}\left(\frac{5\pi}{18}\right)\mathrm{Tan}\left(\frac{\pi}{9}\right)} \\ .7 = \mathrm{Cos}(22.5^{o})^{2} - \mathrm{Sin}(22.5^{o})^{2} & .8 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^{2} - 1 \\ .9 = \frac{2\,\mathrm{Tan}(22.5^{o})}{1 - \mathrm{Tan}(22.5^{o})^{2}} & .10 = 1 - 2\,\mathrm{Sin}(15^{o})^{2} \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{3\pi}{2}, \mathrm{D} = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{2}{3}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{-2}{5}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha + \beta) & .6 = \mathrm{Tan}(\alpha - \beta) \\ .7 = \mathrm{Sin}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\end{bmatrix} \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{\pi}{2}, \mathrm{D} = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{-1}{3}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{1}{2}\right)\right] \\ \begin{bmatrix}\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\beta - \alpha) \\ .5 = \mathrm{Cos}(\alpha - \beta) & .6 = \mathrm{Tan}(\alpha + \beta) \\ .7 = \mathrm{Cos}(2\alpha) & .8 = \mathrm{Tan}(2\beta) \end{bmatrix}\end{bmatrix} \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(68^{o}) = 0.375), Question = \mathrm{Cos}(34^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(8^{o}) = 0.990), Question = \mathrm{Sin}(4^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.645129

$$No1 = \begin{bmatrix} .1 = \text{Cos}(15^o) & .2 = \text{Sin}\left(\frac{5\pi}{12}\right) \\ .3 = \text{Tan}\left(\frac{7\pi}{12}\right) & .4 = \text{Cot}((-255)^o) \\ .5 = \text{Csc}\left(-\frac{\pi}{12}\right) & .6 = \text{Sec}((-105)^o) \\ .7 = \text{Sin}\left(-\frac{13\pi}{12}\right) & .8 = \text{Tan}((-75)^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\text{Sin}\left(\frac{\pi}{12}\right)\text{Cos}\left(\frac{\pi}{12}\right) & .2 = \text{Cos}\left(\frac{5\pi}{36}\right)\text{Cos}\left(\frac{\pi}{9}\right) - \text{Sin}\left(\frac{5\pi}{36}\right)\text{Sin}\left(\frac{\pi}{9}\right) \\ .3 = 1 - 2\,\text{Sin}(15^o)^2 & .4 = \text{Sin}\left(\frac{13\pi}{36}\right)\text{Cos}\left(\frac{\pi}{9}\right) - \text{Cos}\left(\frac{13\pi}{36}\right)\text{Sin}\left(\frac{\pi}{9}\right) \\ .5 = \frac{2\,\text{Tan}(22.5^o)}{1 - \text{Tan}(22.5^o)^2} & .6 = \frac{\text{Tan}\left(\frac{2\pi}{5}\right) - \text{Tan}\left(\frac{\pi}{15}\right)}{1 + \text{Tan}\left(\frac{2\pi}{5}\right)\text{Tan}\left(\frac{\pi}{15}\right)} \\ .7 = 2\,\text{Cos}\left(\frac{\pi}{8}\right)^2 - 1 & .8 = \text{Cos}(42^o)\,\text{Cos}(12^o) + \text{Sin}(42^o)\,\text{Sin}(12^o) \\ .9 = \frac{\text{Tan}(20^o) + \text{Tan}(40^o)}{1 - \text{Tan}(20^o)\,\text{Tan}(40^o)} & .10 = \text{Cos}(22.5^o)^2 - \text{Sin}(22.5^o)^2 \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \pi, D = \frac{3\pi}{2}\right] \\ \left[Cond1 = \left(\text{Sin}(\alpha) = \frac{4}{5}\right), Cond2 = \left(\text{Cos}(\beta) = \frac{-3}{4}\right)\right] \\ \left[\left[\begin{matrix} .1 = \text{Cos}(\alpha) & .2 = \text{Sin}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\alpha + \beta) \\ .5 = \text{Cos}(\alpha - \beta) & .6 = \text{Tan}(\beta - \alpha) \\ .7 = \text{Cos}(2\beta) & .8 = \text{Tan}(2\alpha) \end{matrix}\right]\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \frac{3\pi}{2}, B = 2\pi, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\text{Cos}(\alpha) = \frac{1}{2}\right), Cond2 = \left(\text{Sin}(\beta) = \frac{3}{5}\right)\right] \\ \left[\left[\begin{matrix} .1 = \text{Sin}(\alpha) & .2 = \text{Cos}(\beta) \\ .3 = \text{Tan}(\beta) & .4 = \text{Sin}(\beta - \alpha) \\ .5 = \text{Cos}(\alpha + \beta) & .6 = \text{Tan}(\alpha - \beta) \\ .7 = \text{Sin}(2\alpha) & .8 = \text{Tan}(2\beta) \end{matrix}\right]\right] \end{bmatrix}$$

$$No5 = [Cond = (\text{Cos}(6^o) = 0.995), Question = \text{Cos}(3^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\text{Cos}(50^o) = 0.643), Question = \text{Sin}(25^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.645130

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}(75^{o}) & .2 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{\pi}{12}\right) & .4 = \mathrm{Csc}\left(\frac{11\pi}{12}\right) \\ .5 = \mathrm{Cot}((-345)^{o}) & .6 = \mathrm{Sin}((-75)^{o}) \\ .7 = \mathrm{Tan}\left(-\frac{7\pi}{12}\right) & .8 = \mathrm{Cos}((-255)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) & .2 = \frac{2\,\mathrm{Tan}(15^{o})}{1-\mathrm{Tan}(15^{o})^{2}} \\ .3 = \mathrm{Sin}(12^{o})\,\mathrm{Cos}(18^{o}) + \mathrm{Cos}(12^{o})\,\mathrm{Sin}(18^{o}) & .4 = \frac{\mathrm{Tan}\left(\frac{\pi}{18}\right)+\mathrm{Tan}\left(\frac{7\pi}{36}\right)}{1-\mathrm{Tan}\left(\frac{\pi}{18}\right)\mathrm{Tan}\left(\frac{7\pi}{36}\right)} \\ .5 = \mathrm{Cos}\left(\frac{7\pi}{36}\right)\mathrm{Cos}\left(\frac{5\pi}{36}\right) - \mathrm{Sin}\left(\frac{7\pi}{36}\right)\mathrm{Sin}\left(\frac{5\pi}{36}\right) & .6 = \mathrm{Cos}\left(\frac{\pi}{8}\right)^{2} - \mathrm{Sin}\left(\frac{\pi}{8}\right)^{2} \\ .7 = 2\,\mathrm{Cos}(22.5^{o})^{2} - 1 & .8 = \frac{\mathrm{Tan}\left(\frac{\pi}{3}\right)-\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1+\mathrm{Tan}\left(\frac{\pi}{3}\right)\mathrm{Tan}\left(\frac{\pi}{12}\right)} \\ .9 = \mathrm{Cos}(70^{o})\,\mathrm{Cos}(10^{o}) + \mathrm{Sin}(70^{o})\,\mathrm{Sin}(10^{o}) & .10 = 1 - 2\,\mathrm{Sin}(15^{o})^{2} \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

$$No3 = \begin{bmatrix} \left[A = 0, B = \frac{\pi}{2}, C = \frac{\pi}{2}, D = \pi\right] \\ \left[Cond1 = \left(\mathrm{Cos}(\alpha) = \frac{1}{2}\right), Cond2 = \left(\mathrm{Sin}(\beta) = \frac{5}{7}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Sin}(\alpha) & .2 = \mathrm{Cos}(\beta) \\ .3 = \mathrm{Tan}(\beta) & .4 = \mathrm{Sin}(\beta-\alpha) \\ .5 = \mathrm{Cos}(\alpha+\beta) & .6 = \mathrm{Tan}(\alpha-\beta) \\ .7 = \mathrm{Sin}(2\,\alpha) & .8 = \mathrm{Tan}(2\,\beta) \end{bmatrix}\right] \end{bmatrix}, \quad , No4 = \begin{bmatrix} \left[A = \pi, B = \frac{3\pi}{2}, C = \frac{3\pi}{2}, D = 2\pi\right] \\ \left[Cond1 = \left(\mathrm{Sin}(\alpha) = \frac{-5}{6}\right), Cond2 = \left(\mathrm{Cos}(\beta) = \frac{2}{5}\right)\right] \\ \left[\begin{bmatrix} .1 = \mathrm{Cos}(\alpha) & .2 = \mathrm{Sin}(\beta) \\ .3 = \mathrm{Tan}(\alpha) & .4 = \mathrm{Sin}(\alpha-\beta) \\ .5 = \mathrm{Cos}(\alpha+\beta) & .6 = \mathrm{Tan}(\beta-\alpha) \\ .7 = \mathrm{Sin}(2\,\alpha) & .8 = \mathrm{Tan}(2\,\beta) \end{bmatrix}\right] \end{bmatrix}$$

$$No5 = [Cond = (\mathrm{Cos}(14^{o}) = 0.970), Question = \mathrm{Sin}(7^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = [Cond = (\mathrm{Cos}(66^{o}) = 0.407), Question = \mathrm{Cos}(33^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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