TrigonometryExercise4 for No.9844

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) & .2 = \mathrm{Cos}(15^o) \\ .3 = \mathrm{Tan}\left(\frac{5\pi}{12}\right) & .4 = \mathrm{Csc}((-165)^o) \\ .5 = \mathrm{Sec}\left(\frac{11\pi}{12}\right) & .6 = \mathrm{Cot}((-105)^o) \\ .7 = \mathrm{Sin}\left(\frac{23\pi}{12}\right) & .8 = \mathrm{Tan}((-15)^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{\mathrm{Tan}(60^o) - \mathrm{Tan}(15^o)}{1 + \mathrm{Tan}(60^o)\,\mathrm{Tan}(15^o)} & .2 = 1 - 2\,\mathrm{Sin}(22.5^o)^2 \\ .3 = \mathrm{Sin}\left(\frac{5\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) + \mathrm{Cos}\left(\frac{5\pi}{12}\right)\mathrm{Sin}\left(\frac{\pi}{12}\right) & .4 = \mathrm{Cos}(20^o)\,\mathrm{Cos}(10^o) - \mathrm{Sin}(20^o)\,\mathrm{Sin}(10^o) \\ .5 = 2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - 1 & .6 = \frac{\mathrm{Tan}\left(\frac{\pi}{9}\right) + \mathrm{Tan}\left(\frac{5\pi}{36}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{9}\right)\mathrm{Tan}\left(\frac{5\pi}{36}\right)} \\ .7 = \frac{2\,\mathrm{Tan}(15^o)}{1 - \mathrm{Tan}(15^o)^2} & .8 = \mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{8}\right)^2 \\ .9 = \mathrm{Cos}\left(\frac{2\pi}{9}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) + \mathrm{Sin}\left(\frac{2\pi}{9}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .10 = 2\,\mathrm{Sin}(15^o)\,\mathrm{Cos}(15^o) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

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$$No1 = \begin{bmatrix} .1 = \cos\left(\frac{5\pi}{12}\right) & .2 = \sin(15^o) \\ .3 = \tan\left(\frac{7\pi}{12}\right) & .4 = \tan\left(-\frac{23\pi}{12}\right) \\ .5 = \sin((-195)^o) & .6 = \sec(345^o) \\ .7 = \cos\left(-\frac{17\pi}{12}\right) & .8 = \csc((-165)^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \sin\left(\frac{7\pi}{18}\right)\cos\left(\frac{\pi}{18}\right) - \cos\left(\frac{7\pi}{18}\right)\sin\left(\frac{\pi}{18}\right) & .2 = 1 - 2\sin\left(\frac{\pi}{12}\right)^2 \\ .3 = \cos(20^o)\cos(25^o) - \sin(20^o)\sin(25^o) & .4 = 2\sin(15^o)\cos(15^o) \\ .5 = \cos\left(\frac{\pi}{8}\right)^2 - \sin\left(\frac{\pi}{8}\right)^2 & .6 = 2\cos(22.5^o)^2 - 1 \\ .7 = \sin\left(\frac{\pi}{18}\right)\cos\left(\frac{\pi}{9}\right) + \cos\left(\frac{\pi}{18}\right)\sin\left(\frac{\pi}{9}\right) & .8 = \cos\left(\frac{5\pi}{9}\right)\cos\left(\frac{\pi}{18}\right) + \sin\left(\frac{5\pi}{9}\right)\sin\left(\frac{\pi}{18}\right) \\ .9 = \frac{2\tan(22.5^o)}{1 - \tan(22.5^o)^2} & .10 = \frac{\tan(10^o) + \tan(50^o)}{1 - \tan(10^o)\tan(50^o)} \end{bmatrix}, \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.9873

$$No1 = \begin{bmatrix} .1 = \cos(75^{o}) & .2 = \sin\left(\frac{7\pi}{12}\right) \\ .3 = \tan(15^{o}) & .4 = \cos\left(-\frac{\pi}{12}\right) \\ .5 = \sin((-285)^{o}) & .6 = \sec(345^{o}) \\ .7 = \cot\left(-\frac{13\pi}{12}\right) & .8 = \csc\left(\frac{13\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \cos(65^{o})\cos(20^{o}) + \sin(65^{o})\sin(20^{o}) & .2 = \sin\left(\frac{\pi}{36}\right)\cos\left(\frac{5\pi}{36}\right) + \cos\left(\frac{\pi}{36}\right)\sin\left(\frac{5\pi}{36}\right) \\ .3 = \cos(40^{o})\cos(20^{o}) - \sin(40^{o})\sin(20^{o}) & .4 = \sin(85^{o})\cos(25^{o}) - \cos(85^{o})\sin(25^{o}) \\ .5 = 2\sin(15^{o})\cos(15^{o}) & .6 = 2\cos\left(\frac{\pi}{12}\right)^{2} - 1 \\ .7 = \frac{\tan\left(\frac{\pi}{9}\right) + \tan\left(\frac{5\pi}{36}\right)}{1 - \tan\left(\frac{\pi}{9}\right)\tan\left(\frac{5\pi}{36}\right)} & .8 = \cos\left(\frac{\pi}{8}\right)^{2} - \sin\left(\frac{\pi}{8}\right)^{2} \\ .9 = \frac{2\tan\left(\frac{\pi}{12}\right)}{1 - \tan\left(\frac{\pi}{12}\right)^{2}} & .10 = 1 - 2\sin(22.5^{o})^{2} \end{bmatrix}, , \begin{bmatrix} :) \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ :) \\ :(\\ :) \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.9884

$$No1 = \begin{bmatrix} .1 = \operatorname{Sin}\left(\frac{7\pi}{12}\right) & .2 = \operatorname{Cos}(15^o) \\ .3 = \operatorname{Tan}\left(\frac{5\pi}{12}\right) & .4 = \operatorname{Sec}\left(-\frac{7\pi}{12}\right) \\ .5 = \operatorname{Csc}((-15)^o) & .6 = \operatorname{Cos}\left(-\frac{19\pi}{12}\right) \\ .7 = \operatorname{Tan}((-255)^o) & .8 = \operatorname{Cot}\left(\frac{17\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{\operatorname{Tan}(10^o)+\operatorname{Tan}(20^o)}{1-\operatorname{Tan}(10^o)\operatorname{Tan}(20^o)} & .2 = 2\operatorname{Sin}\left(\frac{\pi}{12}\right)\operatorname{Cos}\left(\frac{\pi}{12}\right) \\ .3 = \operatorname{Cos}(110^o)\operatorname{Cos}(20^o)+\operatorname{Sin}(110^o)\operatorname{Sin}(20^o) & .4 = 1-2\operatorname{Sin}(15^o)^2 \\ .5 = \operatorname{Sin}\left(\frac{11\pi}{36}\right)\operatorname{Cos}\left(\frac{\pi}{18}\right)-\operatorname{Cos}\left(\frac{11\pi}{36}\right)\operatorname{Sin}\left(\frac{\pi}{18}\right) & .6 = \operatorname{Sin}\left(\frac{\pi}{15}\right)\operatorname{Cos}\left(\frac{4\pi}{15}\right)+\operatorname{Cos}\left(\frac{\pi}{15}\right)\operatorname{Sin}\left(\frac{4\pi}{15}\right) \\ .7 = \frac{2\operatorname{Tan}(22.5^o)}{1-\operatorname{Tan}(22.5^o)^2} & .8 = \frac{\operatorname{Tan}\left(\frac{17\pi}{36}\right)-\operatorname{Tan}\left(\frac{5\pi}{36}\right)}{1+\operatorname{Tan}\left(\frac{17\pi}{36}\right)\operatorname{Tan}\left(\frac{5\pi}{36}\right)} \\ .9 = 2\operatorname{Cos}(22.5^o)^2-1 & .10 = \operatorname{Cos}\left(\frac{\pi}{8}\right)^2-\operatorname{Sin}\left(\frac{\pi}{8}\right)^2 \end{bmatrix}, \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

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TrigonometryExercise4 for No.9885

$$No1 = \begin{bmatrix} .1 = \cos(105^\circ) & .2 = \sin\left(\frac{5\pi}{12}\right) \\ .3 = \tan\left(\frac{\pi}{12}\right) & .4 = \sec((-345)^\circ) \\ .5 = \cos\left(-\frac{17\pi}{12}\right) & .6 = \sin\left(-\frac{13\pi}{12}\right) \\ .7 = \tan((-105)^\circ) & .8 = \csc\left(-\frac{19\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \cos(70^\circ)\cos(10^\circ) + \sin(70^\circ)\sin(10^\circ) & .2 = \cos(15^\circ)^2 - \sin(15^\circ)^2 \\ .3 = 2\sin(22.5^\circ)\cos(22.5^\circ) & .4 = 1 - 2\sin\left(\frac{\pi}{8}\right)^2 \\ .5 = \dfrac{\tan\left(\frac{19\pi}{60}\right) - \tan\left(\frac{\pi}{15}\right)}{1 + \tan\left(\frac{19\pi}{60}\right)\tan\left(\frac{\pi}{15}\right)} & .6 = \dfrac{\tan(40^\circ) + \tan(20^\circ)}{1 - \tan(40^\circ)\tan(20^\circ)} \\ .7 = \sin(25^\circ)\cos(20^\circ) + \cos(25^\circ)\sin(20^\circ) & .8 = \sin\left(\frac{7\pi}{12}\right)\cos\left(\frac{\pi}{12}\right) - \cos\left(\frac{7\pi}{12}\right)\sin\left(\frac{\pi}{12}\right) \\ .9 = \dfrac{2\tan(15^\circ)}{1 - \tan(15^\circ)^2} & .10 = 2\cos\left(\frac{\pi}{12}\right)^2 - 1 \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.9895

$$No1 = \begin{bmatrix} .1 = \operatorname{Cos}\left(\frac{\pi}{12}\right) & .2 = \operatorname{Sin}(105^o) \\ .3 = \operatorname{Tan}(75^o) & .4 = \operatorname{Cot}(165^o) \\ .5 = \operatorname{Csc}\left(-\frac{23\pi}{12}\right) & .6 = \operatorname{Cos}\left(-\frac{11\pi}{12}\right) \\ .7 = \operatorname{Sec}((\text{-}285)^o) & .8 = \operatorname{Tan}(195^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{\operatorname{Tan}(55^o) - \operatorname{Tan}(10^o)}{1 + \operatorname{Tan}(55^o)\operatorname{Tan}(10^o)} & .2 = 2\operatorname{Cos}\left(\frac{\pi}{8}\right)^2 - 1 \\ .3 = \frac{2\operatorname{Tan}\left(\frac{\pi}{8}\right)}{1 - \operatorname{Tan}\left(\frac{\pi}{8}\right)^2} & .4 = 1 - 2\operatorname{Sin}(22.5^o)^2 \\ .5 = \frac{\operatorname{Tan}(15^o) + \operatorname{Tan}(30^o)}{1 - \operatorname{Tan}(15^o)\operatorname{Tan}(30^o)} & .6 = \operatorname{Cos}(15^o)^2 - \operatorname{Sin}(15^o)^2 \\ .7 = \operatorname{Sin}\left(\frac{5\pi}{18}\right)\operatorname{Cos}\left(\frac{\pi}{9}\right) - \operatorname{Cos}\left(\frac{5\pi}{18}\right)\operatorname{Sin}\left(\frac{\pi}{9}\right) & .8 = 2\operatorname{Sin}\left(\frac{\pi}{12}\right)\operatorname{Cos}\left(\frac{\pi}{12}\right) \\ .9 = \operatorname{Cos}\left(\frac{5\pi}{36}\right)\operatorname{Cos}\left(\frac{7\pi}{36}\right) - \operatorname{Sin}\left(\frac{5\pi}{36}\right)\operatorname{Sin}\left(\frac{7\pi}{36}\right) & .10 = \operatorname{Sin}(12^o)\operatorname{Cos}(78^o) + \operatorname{Cos}(12^o)\operatorname{Sin}(78^o) \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.9898

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}(75^o) & .2 = \mathrm{Cos}\left(\frac{7\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{\pi}{12}\right) & .4 = \mathrm{Cos}\left(\frac{23\pi}{12}\right) \\ .5 = \mathrm{Cot}((-285)^o) & .6 = \mathrm{Tan}\left(-\frac{\pi}{12}\right) \\ .7 = \mathrm{Csc}(165^o) & .8 = \mathrm{Sec}\left(-\frac{13\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{\mathrm{Tan}\left(\frac{19\pi}{60}\right) - \mathrm{Tan}\left(\frac{\pi}{15}\right)}{1 + \mathrm{Tan}\left(\frac{19\pi}{60}\right)\mathrm{Tan}\left(\frac{\pi}{15}\right)} & .2 = 2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - 1 \\ .3 = \mathrm{Cos}(42^o)\,\mathrm{Cos}(12^o) + \mathrm{Sin}(42^o)\,\mathrm{Sin}(12^o) & .4 = \frac{\mathrm{Tan}\left(\frac{\pi}{12}\right) + \mathrm{Tan}\left(\frac{\pi}{6}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)\mathrm{Tan}\left(\frac{\pi}{6}\right)} \\ .5 = \mathrm{Cos}(22.5^o)^2 - \mathrm{Sin}(22.5^o)^2 & .6 = 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)\mathrm{Cos}\left(\frac{\pi}{8}\right) \\ .7 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^2} & .8 = \mathrm{Sin}\left(\frac{\pi}{9}\right)\mathrm{Cos}\left(\frac{2\pi}{9}\right) + \mathrm{Cos}\left(\frac{\pi}{9}\right)\mathrm{Sin}\left(\frac{2\pi}{9}\right) \\ .9 = \mathrm{Sin}(85^o)\,\mathrm{Cos}(25^o) - \mathrm{Cos}(85^o)\,\mathrm{Sin}(25^o) & .10 = 1 - 2\,\mathrm{Sin}(15^o)^2 \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

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TrigonometryExercise4 for No.9899

$$No1 = \begin{bmatrix} .1 = \text{Cos}(105^o) & .2 = \text{Sin}\left(\frac{\pi}{12}\right) \\ .3 = \text{Tan}\left(\frac{5\pi}{12}\right) & .4 = \text{Csc}((-345)^o) \\ .5 = \text{Sec}\left(\frac{23\pi}{12}\right) & .6 = \text{Cos}\left(\frac{19\pi}{12}\right) \\ .7 = \text{Cot}(165^o) & .8 = \text{Tan}\left(-\frac{19\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \text{Cos}\left(\frac{\pi}{10}\right)\text{Cos}\left(\frac{\pi}{15}\right) - \text{Sin}\left(\frac{\pi}{10}\right)\text{Sin}\left(\frac{\pi}{15}\right) & .2 = 2\,\text{Cos}(22.5^o)^2 - 1 \\ .3 = \text{Sin}(35^o)\,\text{Cos}(5^o) - \text{Cos}(35^o)\,\text{Sin}(5^o) & .4 = 1 - 2\,\text{Sin}(15^o)^2 \\ .5 = \dfrac{\text{Tan}\left(\frac{13\pi}{36}\right) - \text{Tan}\left(\frac{\pi}{9}\right)}{1 + \text{Tan}\left(\frac{13\pi}{36}\right)\text{Tan}\left(\frac{\pi}{9}\right)} & .6 = \text{Cos}\left(\frac{\pi}{8}\right)^2 - \text{Sin}\left(\frac{\pi}{8}\right)^2 \\ .7 = 2\,\text{Sin}\left(\frac{\pi}{12}\right)\text{Cos}\left(\frac{\pi}{12}\right) & .8 = \dfrac{\text{Tan}\left(\frac{5\pi}{18}\right) + \text{Tan}\left(\frac{\pi}{18}\right)}{1 - \text{Tan}\left(\frac{5\pi}{18}\right)\text{Tan}\left(\frac{\pi}{18}\right)} \\ .9 = \dfrac{2\,\text{Tan}(15^o)}{1 - \text{Tan}(15^o)^2} & .10 = \text{Sin}(20^o)\,\text{Cos}(70^o) + \text{Cos}(20^o)\,\text{Sin}(70^o) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

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$$No1 = \begin{bmatrix} .1 = \cos(75^{o}) & .2 = \sin\left(\frac{\pi}{12}\right) \\ .3 = \tan\left(\frac{7\pi}{12}\right) & .4 = \tan\left(-\frac{13\pi}{12}\right) \\ .5 = \cos((-285)^{o}) & .6 = \sec((-165)^{o}) \\ .7 = \cot\left(\frac{19\pi}{12}\right) & .8 = \csc((-15)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 1 - 2\sin(22.5^{o})^2 & .2 = \frac{\tan(55^{o}) - \tan(10^{o})}{1 + \tan(55^{o})\tan(10^{o})} \\ .3 = \sin\left(\frac{\pi}{15}\right)\cos\left(\frac{4\pi}{15}\right) + \cos\left(\frac{\pi}{15}\right)\sin\left(\frac{4\pi}{15}\right) & .4 = \cos\left(\frac{\pi}{8}\right)^2 - \sin\left(\frac{\pi}{8}\right)^2 \\ .5 = \sin(50^{o})\cos(20^{o}) - \cos(50^{o})\sin(20^{o}) & .6 = 2\cos(15^{o})^2 - 1 \\ .7 = 2\sin\left(\frac{\pi}{12}\right)\cos\left(\frac{\pi}{12}\right) & .8 = \frac{\tan\left(\frac{\pi}{15}\right) + \tan\left(\frac{11\pi}{60}\right)}{1 - \tan\left(\frac{\pi}{15}\right)\tan\left(\frac{11\pi}{60}\right)} \\ .9 = \cos\left(\frac{11\pi}{18}\right)\cos\left(\frac{\pi}{9}\right) + \sin\left(\frac{11\pi}{18}\right)\sin\left(\frac{\pi}{9}\right) & .10 = \frac{2\tan\left(\frac{\pi}{12}\right)}{1 - \tan\left(\frac{\pi}{12}\right)^2} \end{bmatrix}, \quad , \begin{bmatrix} \frac{:)}{:(} \\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \frac{:)}{:(} \\ \frac{:)}{:(} \end{bmatrix}$$

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

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

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

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Sin}(105^o) \\ .3 = \mathrm{Tan}\left(\frac{5\pi}{12}\right) & .4 = \mathrm{Sec}\left(-\frac{23\pi}{12}\right) \\ .5 = \mathrm{Cos}((-165)^o) & .6 = \mathrm{Sin}((-105)^o) \\ .7 = \mathrm{Csc}\left(-\frac{\pi}{12}\right) & .8 = \mathrm{Cot}\left(\frac{11\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Cos}(22.5^o)^2 - \mathrm{Sin}(22.5^o)^2 & .2 = \mathrm{Cos}(50^o)\,\mathrm{Cos}(20^o) + \mathrm{Sin}(50^o)\,\mathrm{Sin}(20^o) \\ .3 = \mathrm{Cos}(40^o)\,\mathrm{Cos}(20^o) - \mathrm{Sin}(40^o)\,\mathrm{Sin}(20^o) & .4 = \mathrm{Sin}\left(\frac{17\pi}{30}\right)\mathrm{Cos}\left(\frac{\pi}{15}\right) - \mathrm{Cos}\left(\frac{17\pi}{30}\right)\mathrm{Sin}\left(\frac{\pi}{15}\right) \\ .5 = \frac{\mathrm{Tan}(10^o) + \mathrm{Tan}(20^o)}{1 - \mathrm{Tan}(10^o)\,\mathrm{Tan}(20^o)} & .6 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^2 \\ .7 = \frac{2\,\mathrm{Tan}(15^o)}{1 - \mathrm{Tan}(15^o)^2} & .8 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - 1 \\ .9 = 2\,\mathrm{Sin}(15^o)\,\mathrm{Cos}(15^o) & .10 = \frac{\mathrm{Tan}\left(\frac{13\pi}{36}\right) - \mathrm{Tan}\left(\frac{\pi}{9}\right)}{1 + \mathrm{Tan}\left(\frac{13\pi}{36}\right)\mathrm{Tan}\left(\frac{\pi}{9}\right)} \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.10017

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}(105^{o}) & .2 = \mathrm{Sin}\left(\frac{5\pi}{12}\right) \\ .3 = \mathrm{Tan}(15^{o}) & .4 = \mathrm{Cot}\left(\frac{23\pi}{12}\right) \\ .5 = \mathrm{Sin}((-255)^{o}) & .6 = \mathrm{Sec}(255^{o}) \\ .7 = \mathrm{Cos}\left(-\frac{19\pi}{12}\right) & .8 = \mathrm{Csc}((-75)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{2\,\mathrm{Tan}(15^{o})}{1-\mathrm{Tan}(15^{o})^{2}} & .2 = \mathrm{Cos}(22.5^{o})^{2} - \mathrm{Sin}(22.5^{o})^{2} \\ .3 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^{2} - 1 & .4 = \mathrm{Sin}(18^{o})\,\mathrm{Cos}(12^{o}) + \mathrm{Cos}(18^{o})\,\mathrm{Sin}(12^{o}) \\ .5 = \frac{\mathrm{Tan}\left(\frac{\pi}{15}\right)+\mathrm{Tan}\left(\frac{11\pi}{60}\right)}{1-\mathrm{Tan}\left(\frac{\pi}{15}\right)\mathrm{Tan}\left(\frac{11\pi}{60}\right)} & .6 = 2\,\mathrm{Sin}(15^{o})\,\mathrm{Cos}(15^{o}) \\ .7 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^{2} & .8 = \mathrm{Cos}(105^{o})\,\mathrm{Cos}(15^{o}) + \mathrm{Sin}(105^{o})\,\mathrm{Sin}(15^{o}) \\ .9 = \frac{\mathrm{Tan}\left(\frac{7\pi}{18}\right)-\mathrm{Tan}\left(\frac{\pi}{18}\right)}{1+\mathrm{Tan}\left(\frac{7\pi}{18}\right)\mathrm{Tan}\left(\frac{\pi}{18}\right)} & .10 = \mathrm{Cos}\left(\frac{\pi}{9}\right)\mathrm{Cos}\left(\frac{2\pi}{9}\right) - \mathrm{Sin}\left(\frac{\pi}{9}\right)\mathrm{Sin}\left(\frac{2\pi}{9}\right) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

$$No6 = [Cond = (\mathrm{Cos}(82^{o}) = 0.139), Question = \mathrm{Sin}(41^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No1 = \begin{bmatrix} .1 = \cos(75^o) & .2 = \sin\left(\frac{7\pi}{12}\right) \\ .3 = \tan(15^o) & .4 = \sin\left(\frac{11\pi}{12}\right) \\ .5 = \cot((-285)^o) & .6 = \sec\left(-\frac{17\pi}{12}\right) \\ .7 = \csc((-195)^o) & .8 = \tan\left(\frac{19\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 1 - 2\sin(15^o)^2 & .2 = \sin(80^o)\cos(20^o) - \cos(80^o)\sin(20^o) \\ .3 = 2\cos\left(\frac{\pi}{12}\right)^2 - 1 & .4 = \cos(22.5^o)^2 - \sin(22.5^o)^2 \\ .5 = \dfrac{\tan\left(\frac{\pi}{12}\right) + \tan\left(\frac{\pi}{6}\right)}{1 - \tan\left(\frac{\pi}{12}\right)\tan\left(\frac{\pi}{6}\right)} & .6 = \dfrac{\tan(42^o) - \tan(12^o)}{1 + \tan(42^o)\tan(12^o)} \\ .7 = \dfrac{2\tan(15^o)}{1 - \tan(15^o)^2} & .8 = \cos\left(\frac{11\pi}{18}\right)\cos\left(\frac{\pi}{9}\right) + \sin\left(\frac{11\pi}{18}\right)\sin\left(\frac{\pi}{9}\right) \\ .9 = 2\sin\left(\frac{\pi}{8}\right)\cos\left(\frac{\pi}{8}\right) & .10 = \cos\left(\frac{5\pi}{18}\right)\cos\left(\frac{\pi}{18}\right) - \sin\left(\frac{5\pi}{18}\right)\sin\left(\frac{\pi}{18}\right) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

$$No6 = [Cond = (\cos(82^o) = 0.139), Question = \sin(41^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.10057

$$No1 = \begin{bmatrix} .1 = \text{Sin}\left(\frac{5\pi}{12}\right) & .2 = \text{Cos}(15^o) \\ .3 = \text{Tan}\left(\frac{7\pi}{12}\right) & .4 = \text{Csc}\left(\frac{17\pi}{12}\right) \\ .5 = \text{Tan}(345^o) & .6 = \text{Cos}((-255)^o) \\ .7 = \text{Cot}\left(\frac{13\pi}{12}\right) & .8 = \text{Sec}((-195)^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \dfrac{\text{Tan}\left(\frac{\pi}{3}\right) - \text{Tan}\left(\frac{\pi}{12}\right)}{1 + \text{Tan}\left(\frac{\pi}{3}\right)\text{Tan}\left(\frac{\pi}{12}\right)} & .2 = \text{Cos}(80^o)\,\text{Cos}(20^o) + \text{Sin}(80^o)\,\text{Sin}(20^o) \\ .3 = \text{Sin}(40^o)\,\text{Cos}(10^o) - \text{Cos}(40^o)\,\text{Sin}(10^o) & .4 = 2\,\text{Cos}(15^o)^2 - 1 \\ .5 = \dfrac{2\,\text{Tan}(22.5^o)}{1 - \text{Tan}(22.5^o)^2} & .6 = \text{Sin}\left(\frac{\pi}{9}\right)\text{Cos}\left(\frac{2\pi}{9}\right) + \text{Cos}\left(\frac{\pi}{9}\right)\text{Sin}\left(\frac{2\pi}{9}\right) \\ .7 = \text{Cos}\left(\frac{\pi}{8}\right)^2 - \text{Sin}\left(\frac{\pi}{8}\right)^2 & .8 = 1 - 2\,\text{Sin}(22.5^o)^2 \\ .9 = \text{Cos}(35^o)\,\text{Cos}(10^o) - \text{Sin}(35^o)\,\text{Sin}(10^o) & .10 = 2\,\text{Sin}\left(\frac{\pi}{12}\right)\text{Cos}\left(\frac{\pi}{12}\right) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.10061

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}(15^o) & .2 = \mathrm{Cos}\left(\frac{5\pi}{12}\right) \\ .3 = \mathrm{Tan}(105^o) & .4 = \mathrm{Tan}((-285)^o) \\ .5 = \mathrm{Cot}\left(\frac{17\pi}{12}\right) & .6 = \mathrm{Sin}((-255)^o) \\ .7 = \mathrm{Cos}\left(-\frac{7\pi}{12}\right) & .8 = \mathrm{Sec}\left(\frac{23\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{\mathrm{Tan}(10^o)+\mathrm{Tan}(50^o)}{1-\mathrm{Tan}(10^o)\,\mathrm{Tan}(50^o)} & .2 = \mathrm{Cos}(35^o)\,\mathrm{Cos}(10^o) - \mathrm{Sin}(35^o)\,\mathrm{Sin}(10^o) \\ .3 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^2 & .4 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - 1 \\ .5 = \mathrm{Sin}\left(\frac{7\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) - \mathrm{Cos}\left(\frac{7\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .6 = \mathrm{Cos}(15^o)^2 - \mathrm{Sin}(15^o)^2 \\ .7 = 2\,\mathrm{Sin}(22.5^o)\,\mathrm{Cos}(22.5^o) & .8 = \frac{2\,\mathrm{Tan}(15^o)}{1-\mathrm{Tan}(15^o)^2} \\ .9 = \mathrm{Cos}\left(\frac{13\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) + \mathrm{Sin}\left(\frac{13\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) & .10 = \frac{\mathrm{Tan}(35^o)-\mathrm{Tan}(5^o)}{1+\mathrm{Tan}(35^o)\,\mathrm{Tan}(5^o)} \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

$$No1=\begin{bmatrix} .1=\mathrm{Cos}\left(\frac{5\pi}{12}\right) & .2=\mathrm{Sin}(15^{o}) \\ .3=\mathrm{Tan}\left(\frac{7\pi}{12}\right) & .4=\mathrm{Cos}(195^{o}) \\ .5=\mathrm{Sec}\left(-\frac{\pi}{12}\right) & .6=\mathrm{Tan}\left(-\frac{23\pi}{12}\right) \\ .7=\mathrm{Cot}((-105)^{o}) & .8=\mathrm{Sin}(165^{o}) \end{bmatrix}, No2=\begin{bmatrix} .1=\mathrm{Sin}(20^{o})\,\mathrm{Cos}(40^{o})+\mathrm{Cos}(20^{o})\,\mathrm{Sin}(40^{o}) & .2=\dfrac{2\,\mathrm{Tan}(15^{o})}{1-\mathrm{Tan}(15^{o})^{2}} \\ .3=1-2\,\mathrm{Sin}(22.5^{o})^{2} & .4=\dfrac{\mathrm{Tan}\left(\frac{\pi}{12}\right)+\mathrm{Tan}\left(\frac{\pi}{6}\right)}{1-\mathrm{Tan}\left(\frac{\pi}{12}\right)\mathrm{Tan}\left(\frac{\pi}{6}\right)} \\ .5=2\,\mathrm{Sin}(15^{o})\,\mathrm{Cos}(15^{o}) & .6=\mathrm{Sin}(72^{o})\,\mathrm{Cos}(12^{o})-\mathrm{Cos}(72^{o})\,\mathrm{Sin}(12^{o}) \\ .7=2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^{2}-1 & .8=\mathrm{Cos}\left(\frac{\pi}{8}\right)^{2}-\mathrm{Sin}\left(\frac{\pi}{8}\right)^{2} \\ .9=\mathrm{Cos}\left(\frac{\pi}{9}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right)-\mathrm{Sin}\left(\frac{\pi}{9}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .10=\mathrm{Cos}(35^{o})\,\mathrm{Cos}(5^{o})+\mathrm{Sin}(35^{o})\,\mathrm{Sin}(5^{o}) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

$$No6=[Cond=(\mathrm{Cos}(56^{o})=0.559),\,Question=\mathrm{Cos}(28^{o})], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.10088

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}(105^o) & .2 = \mathrm{Cos}\left(\frac{\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{5\pi}{12}\right) & .4 = \mathrm{Cos}\left(-\frac{17\pi}{12}\right) \\ .5 = \mathrm{Sin}((-195)^o) & .6 = \mathrm{Sec}\left(-\frac{\pi}{12}\right) \\ .7 = \mathrm{Tan}((-75)^o) & .8 = \mathrm{Cot}\left(-\frac{19\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{5\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) - \mathrm{Cos}\left(\frac{5\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) & .2 = \mathrm{Cos}\left(\frac{\pi}{3}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) + \mathrm{Sin}\left(\frac{\pi}{3}\right)\mathrm{Sin}\left(\frac{\pi}{12}\right) \\ .3 = \frac{\mathrm{Tan}(25^o) + \mathrm{Tan}(20^o)}{1 - \mathrm{Tan}(25^o)\,\mathrm{Tan}(20^o)} & .4 = 2\,\mathrm{Sin}(15^o)\,\mathrm{Cos}(15^o) \\ .5 = \mathrm{Cos}(22.5^o)^2 - \mathrm{Sin}(22.5^o)^2 & .6 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^2 \\ .7 = \mathrm{Sin}(20^o)\,\mathrm{Cos}(40^o) + \mathrm{Cos}(20^o)\,\mathrm{Sin}(40^o) & .8 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - 1 \\ .9 = \frac{2\,\mathrm{Tan}(15^o)}{1 - \mathrm{Tan}(15^o)^2} & .10 = \mathrm{Cos}\left(\frac{\pi}{9}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) - \mathrm{Sin}\left(\frac{\pi}{9}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

$$No6 = [Cond = (\mathrm{Cos}(82^o) = 0.139), Question = \mathrm{Sin}(41^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.10385

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}(15^o) & .2 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) \\ .3 = \mathrm{Tan}\left(\frac{5\pi}{12}\right) & .4 = \mathrm{Cot}\left(-\frac{13\pi}{12}\right) \\ .5 = \mathrm{Csc}(255^o) & .6 = \mathrm{Cos}((-165)^o) \\ .7 = \mathrm{Sec}\left(\frac{23\pi}{12}\right) & .8 = \mathrm{Tan}(195^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^2 & .2 = \mathrm{Sin}\left(\frac{5\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) + \mathrm{Cos}\left(\frac{5\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) \\ .3 = \mathrm{Cos}(65^o)\,\mathrm{Cos}(20^o) + \mathrm{Sin}(65^o)\,\mathrm{Sin}(20^o) & .4 = \mathrm{Cos}(18^o)\,\mathrm{Cos}(12^o) - \mathrm{Sin}(18^o)\,\mathrm{Sin}(12^o) \\ .5 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) & .6 = 2\,\mathrm{Cos}(22.5^o)^2 - 1 \\ .7 = \mathrm{Sin}(100^o)\,\mathrm{Cos}(10^o) - \mathrm{Cos}(100^o)\,\mathrm{Sin}(10^o) & .8 = \dfrac{\mathrm{Tan}\left(\frac{4\pi}{15}\right) + \mathrm{Tan}\left(\frac{\pi}{15}\right)}{1 - \mathrm{Tan}\left(\frac{4\pi}{15}\right)\mathrm{Tan}\left(\frac{\pi}{15}\right)} \\ .9 = \mathrm{Cos}(15^o)^2 - \mathrm{Sin}(15^o)^2 & .10 = \dfrac{2\,\mathrm{Tan}(22.5^o)}{1 - \mathrm{Tan}(22.5^o)^2} \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) & .2 = \mathrm{Cos}(15^o) \\ .3 = \mathrm{Tan}(75^o) & .4 = \mathrm{Sin}\left(\frac{17\pi}{12}\right) \\ .5 = \mathrm{Cot}(345^o) & .6 = \mathrm{Cos}\left(-\frac{7\pi}{12}\right) \\ .7 = \mathrm{Csc}((-75)^o) & .8 = \mathrm{Tan}\left(\frac{11\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \frac{\mathrm{Tan}(35^o) - \mathrm{Tan}(5^o)}{1 + \mathrm{Tan}(35^o)\,\mathrm{Tan}(5^o)} & .2 = 2\,\mathrm{Sin}(22.5^o)\,\mathrm{Cos}(22.5^o) \\ .3 = \mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{8}\right)^2 & .4 = 1 - 2\,\mathrm{Sin}(15^o)^2 \\ .5 = \frac{\mathrm{Tan}(48^o) + \mathrm{Tan}(12^o)}{1 - \mathrm{Tan}(48^o)\,\mathrm{Tan}(12^o)} & .6 = \frac{2\,\mathrm{Tan}(15^o)}{1 - \mathrm{Tan}(15^o)^2} \\ .7 = 2\,\mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - 1 & .8 = \mathrm{Cos}(25^o)\,\mathrm{Cos}(5^o) - \mathrm{Sin}(25^o)\,\mathrm{Sin}(5^o) \\ .9 = \mathrm{Sin}\left(\frac{19\pi}{60}\right)\mathrm{Cos}\left(\frac{\pi}{15}\right) - \mathrm{Cos}\left(\frac{19\pi}{60}\right)\mathrm{Sin}\left(\frac{\pi}{15}\right) & .10 = \mathrm{Cos}\left(\frac{2\pi}{5}\right)\mathrm{Cos}\left(\frac{\pi}{15}\right) + \mathrm{Sin}\left(\frac{2\pi}{5}\right)\mathrm{Sin}\left(\frac{\pi}{15}\right) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.10914

$$No1 = \begin{bmatrix} .1 = \sin(75^o) & .2 = \cos\left(\frac{\pi}{12}\right) \\ .3 = \tan(105^o) & .4 = \cot\left(-\frac{19\pi}{12}\right) \\ .5 = \sin(345^o) & .6 = \tan\left(\frac{17\pi}{12}\right) \\ .7 = \cos((-75)^o) & .8 = \sec\left(\frac{13\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \cos(15^o)^2 - \sin(15^o)^2 & .2 = 1 - 2\sin(22.5^o)^2 \\ .3 = 2\sin\left(\frac{\pi}{12}\right)\cos\left(\frac{\pi}{12}\right) & .4 = \dfrac{\tan\left(\frac{4\pi}{15}\right) + \tan\left(\frac{\pi}{15}\right)}{1 - \tan\left(\frac{4\pi}{15}\right)\tan\left(\frac{\pi}{15}\right)} \\ .5 = \cos(12^o)\cos(33^o) - \sin(12^o)\sin(33^o) & .6 = \dfrac{2\tan(22.5^o)}{1 - \tan(22.5^o)^2} \\ .7 = \sin(42^o)\cos(12^o) - \cos(42^o)\sin(12^o) & .8 = \dfrac{\tan(80^o) - \tan(20^o)}{1 + \tan(80^o)\tan(20^o)} \\ .9 = 2\cos\left(\frac{\pi}{8}\right)^2 - 1 & .10 = \sin\left(\frac{5\pi}{12}\right)\cos\left(\frac{\pi}{12}\right) + \cos\left(\frac{5\pi}{12}\right)\sin\left(\frac{\pi}{12}\right) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.10945

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Cos}(105^o) \\ .3 = \mathrm{Tan}(75^o) & .4 = \mathrm{Sec}\left(-\frac{5\pi}{12}\right) \\ .5 = \mathrm{Cos}(165^o) & .6 = \mathrm{Cot}\left(\frac{13\pi}{12}\right) \\ .7 = \mathrm{Sin}((-195)^o) & .8 = \mathrm{Csc}((-345)^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\mathrm{Cos}(22.5^o)^2 - 1 & .2 = \mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{12}\right)^2 \\ .3 = \mathrm{Sin}\left(\frac{2\pi}{9}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) - \mathrm{Cos}\left(\frac{2\pi}{9}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .4 = \frac{2\,\mathrm{Tan}(15^o)}{1 - \mathrm{Tan}(15^o)^2} \\ .5 = 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)\mathrm{Cos}\left(\frac{\pi}{8}\right) & .6 = 1 - 2\,\mathrm{Sin}(15^o)^2 \\ .7 = \mathrm{Cos}(30^o)\,\mathrm{Cos}(15^o) - \mathrm{Sin}(30^o)\,\mathrm{Sin}(15^o) & .8 = \mathrm{Cos}\left(\frac{19\pi}{60}\right)\mathrm{Cos}\left(\frac{\pi}{15}\right) + \mathrm{Sin}\left(\frac{19\pi}{60}\right)\mathrm{Sin}\left(\frac{\pi}{15}\right) \\ .9 = \frac{\mathrm{Tan}(72^o) - \mathrm{Tan}(12^o)}{1 + \mathrm{Tan}(72^o)\,\mathrm{Tan}(12^o)} & .10 = \frac{\mathrm{Tan}(5^o) + \mathrm{Tan}(25^o)}{1 - \mathrm{Tan}(5^o)\,\mathrm{Tan}(25^o)} \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

$$No6 = [Cond = (\mathrm{Cos}(10^o) = 0.985), Question = \mathrm{Sin}(5^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.10954

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Cos}(75^{o}) \\ .3 = \mathrm{Tan}(105^{o}) & .4 = \mathrm{Tan}\left(-\frac{19\,\pi}{12}\right) \\ .5 = \mathrm{Cot}((-165)^{o}) & .6 = \mathrm{Cos}\left(-\frac{\pi}{12}\right) \\ .7 = \mathrm{Csc}((-195)^{o}) & .8 = \mathrm{Sin}((-255)^{o}) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{11\,\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) - \mathrm{Cos}\left(\frac{11\,\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .2 = 1 - 2\,\mathrm{Sin}(22.5^{o})^{2} \\ .3 = 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)\mathrm{Cos}\left(\frac{\pi}{8}\right) & .4 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^{2}} \\ .5 = \frac{\mathrm{Tan}(12^{o}) + \mathrm{Tan}(33^{o})}{1 - \mathrm{Tan}(12^{o})\,\mathrm{Tan}(33^{o})} & .6 = \frac{\mathrm{Tan}(70^{o}) - \mathrm{Tan}(10^{o})}{1 + \mathrm{Tan}(70^{o})\,\mathrm{Tan}(10^{o})} \\ .7 = \mathrm{Cos}\left(\frac{\pi}{12}\right)^{2} - \mathrm{Sin}\left(\frac{\pi}{12}\right)^{2} & .8 = 2\,\mathrm{Cos}(15^{o})^{2} - 1 \\ .9 = \mathrm{Cos}(10^{o})\,\mathrm{Cos}(50^{o}) - \mathrm{Sin}(10^{o})\,\mathrm{Sin}(50^{o}) & .10 = \mathrm{Sin}\left(\frac{\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) + \mathrm{Cos}\left(\frac{\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

$$No6 = [\,Cond = (\mathrm{Cos}(30^{o}) = 0.866),\ Question = \mathrm{Cos}(15^{o})\,], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No1 = \begin{bmatrix} .1 = \operatorname{Cos}(75^{o}) & .2 = \operatorname{Sin}\left(\frac{7\pi}{12}\right) \\ .3 = \operatorname{Tan}\left(\frac{\pi}{12}\right) & .4 = \operatorname{Csc}\left(\frac{13\pi}{12}\right) \\ .5 = \operatorname{Cos}((-105)^{o}) & .6 = \operatorname{Tan}\left(-\frac{23\pi}{12}\right) \\ .7 = \operatorname{Cot}((-15)^{o}) & .8 = \operatorname{Sin}\left(\frac{17\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\operatorname{Cos}\left(\frac{\pi}{12}\right)^{2} - 1 & .2 = \dfrac{2\operatorname{Tan}\left(\frac{\pi}{8}\right)}{1 - \operatorname{Tan}\left(\frac{\pi}{8}\right)^{2}} \\ .3 = \operatorname{Cos}(22.5^{o})^{2} - \operatorname{Sin}(22.5^{o})^{2} & .4 = \operatorname{Cos}(72^{o})\operatorname{Cos}(12^{o}) + \operatorname{Sin}(72^{o})\operatorname{Sin}(12^{o}) \\ .5 = \dfrac{\operatorname{Tan}\left(\frac{\pi}{9}\right) + \operatorname{Tan}\left(\frac{5\pi}{36}\right)}{1 - \operatorname{Tan}\left(\frac{\pi}{9}\right)\operatorname{Tan}\left(\frac{5\pi}{36}\right)} & .6 = 1 - 2\operatorname{Sin}(15^{o})^{2} \\ .7 = \dfrac{\operatorname{Tan}\left(\frac{7\pi}{30}\right) - \operatorname{Tan}\left(\frac{\pi}{15}\right)}{1 + \operatorname{Tan}\left(\frac{7\pi}{30}\right)\operatorname{Tan}\left(\frac{\pi}{15}\right)} & .8 = 2\operatorname{Sin}\left(\frac{\pi}{8}\right)\operatorname{Cos}\left(\frac{\pi}{8}\right) \\ .9 = \operatorname{Cos}(15^{o})\operatorname{Cos}(75^{o}) - \operatorname{Sin}(15^{o})\operatorname{Sin}(75^{o}) & .10 = \operatorname{Sin}(60^{o})\operatorname{Cos}(15^{o}) - \operatorname{Cos}(60^{o})\operatorname{Sin}(15^{o}) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.11154

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{7\pi}{12}\right) & .2 = \mathrm{Sin}(15^o) \\ .3 = \mathrm{Tan}\left(\frac{5\pi}{12}\right) & .4 = \mathrm{Tan}\left(\frac{23\pi}{12}\right) \\ .5 = \mathrm{Cos}((-285)^o) & .6 = \mathrm{Cot}\left(-\frac{17\pi}{12}\right) \\ .7 = \mathrm{Csc}((-345)^o) & .8 = \mathrm{Sin}\left(-\frac{13\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 1 - 2\,\mathrm{Sin}(22.5^o)^2 & .2 = \mathrm{Sin}\left(\frac{7\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) + \mathrm{Cos}\left(\frac{7\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) \\ .3 = \dfrac{\mathrm{Tan}\left(\frac{2\pi}{5}\right) - \mathrm{Tan}\left(\frac{\pi}{15}\right)}{1 + \mathrm{Tan}\left(\frac{2\pi}{5}\right)\mathrm{Tan}\left(\frac{\pi}{15}\right)} & .4 = \mathrm{Sin}\left(\frac{11\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) - \mathrm{Cos}\left(\frac{11\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) \\ .5 = 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)\mathrm{Cos}\left(\frac{\pi}{8}\right) & .6 = \mathrm{Cos}(10^o)\,\mathrm{Cos}(80^o) - \mathrm{Sin}(10^o)\,\mathrm{Sin}(80^o) \\ .7 = \dfrac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^2} & .8 = \mathrm{Cos}(50^o)\,\mathrm{Cos}(20^o) + \mathrm{Sin}(50^o)\,\mathrm{Sin}(20^o) \\ .9 = \mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{12}\right)^2 & .10 = 2\,\mathrm{Cos}(15^o)^2 - 1 \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.11191

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{7\pi}{12}\right) & .2 = \mathrm{Sin}(15^o) \\ .3 = \mathrm{Tan}(75^o) & .4 = \mathrm{Cos}(345^o) \\ .5 = \mathrm{Cot}\left(\frac{19\pi}{12}\right) & .6 = \mathrm{Sec}((-165)^o) \\ .7 = \mathrm{Sin}\left(\frac{11\pi}{12}\right) & .8 = \mathrm{Tan}\left(\frac{17\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \dfrac{\mathrm{Tan}\left(\frac{\pi}{3}\right) - \mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 + \mathrm{Tan}\left(\frac{\pi}{3}\right)\mathrm{Tan}\left(\frac{\pi}{12}\right)} & .2 = \mathrm{Sin}(85^o)\,\mathrm{Cos}(25^o) - \mathrm{Cos}(85^o)\,\mathrm{Sin}(25^o) \\ .3 = \mathrm{Cos}(70^o)\,\mathrm{Cos}(20^o) - \mathrm{Sin}(70^o)\,\mathrm{Sin}(20^o) & .4 = \mathrm{Cos}(100^o)\,\mathrm{Cos}(10^o) + \mathrm{Sin}(100^o)\,\mathrm{Sin}(10^o) \\ .5 = \dfrac{\mathrm{Tan}\left(\frac{\pi}{9}\right) + \mathrm{Tan}\left(\frac{5\pi}{36}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{9}\right)\mathrm{Tan}\left(\frac{5\pi}{36}\right)} & .6 = \dfrac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^2} \\ .7 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) & .8 = \mathrm{Cos}(15^o)^2 - \mathrm{Sin}(15^o)^2 \\ .9 = 1 - 2\,\mathrm{Sin}(22.5^o)^2 & .10 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - 1 \end{bmatrix}, , \begin{bmatrix} :) \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ :) \\ :(\\ :) \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.11309

$$No1 = \begin{bmatrix} .1 = \operatorname{Cos}\left(\frac{7\pi}{12}\right) & .2 = \operatorname{Sin}(15^o) \\ .3 = \operatorname{Tan}(75^o) & .4 = \operatorname{Tan}(195^o) \\ .5 = \operatorname{Sin}\left(\frac{23\pi}{12}\right) & .6 = \operatorname{Csc}\left(-\frac{13\pi}{12}\right) \\ .7 = \operatorname{Sec}((-75)^o) & .8 = \operatorname{Cot}\left(-\frac{23\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\operatorname{Sin}\left(\frac{\pi}{8}\right)\operatorname{Cos}\left(\frac{\pi}{8}\right) & .2 = \operatorname{Sin}(42^o)\operatorname{Cos}(12^o) - \operatorname{Cos}(42^o)\operatorname{Sin}(12^o) \\ .3 = \operatorname{Cos}(22.5^o)^2 - \operatorname{Sin}(22.5^o)^2 & .4 = 2\operatorname{Cos}(15^o)^2 - 1 \\ .5 = \dfrac{\operatorname{Tan}\left(\frac{11\pi}{36}\right) - \operatorname{Tan}\left(\frac{\pi}{18}\right)}{1 + \operatorname{Tan}\left(\frac{11\pi}{36}\right)\operatorname{Tan}\left(\frac{\pi}{18}\right)} & .6 = \operatorname{Sin}\left(\frac{5\pi}{18}\right)\operatorname{Cos}\left(\frac{\pi}{18}\right) + \operatorname{Cos}\left(\frac{5\pi}{18}\right)\operatorname{Sin}\left(\frac{\pi}{18}\right) \\ .7 = 1 - 2\operatorname{Sin}\left(\frac{\pi}{12}\right)^2 & .8 = \operatorname{Cos}(102^o)\operatorname{Cos}(12^o) + \operatorname{Sin}(102^o)\operatorname{Sin}(12^o) \\ .9 = \dfrac{2\operatorname{Tan}\left(\frac{\pi}{8}\right)}{1 - \operatorname{Tan}\left(\frac{\pi}{8}\right)^2} & .10 = \dfrac{\operatorname{Tan}\left(\frac{\pi}{18}\right) + \operatorname{Tan}\left(\frac{\pi}{9}\right)}{1 - \operatorname{Tan}\left(\frac{\pi}{18}\right)\operatorname{Tan}\left(\frac{\pi}{9}\right)} \end{bmatrix}, \quad , \begin{bmatrix} :) \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ :) \\ :(\\ :) \\ :(\end{bmatrix}$$

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

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

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

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TrigonometryExercise4 for No.12483

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Sin}(75^o) \\ .3 = \mathrm{Tan}(105^o) & .4 = \mathrm{Sec}((-195)^o) \\ .5 = \mathrm{Cot}\left(-\frac{11\pi}{12}\right) & .6 = \mathrm{Cos}(345^o) \\ .7 = \mathrm{Sin}\left(\frac{13\pi}{12}\right) & .8 = \mathrm{Tan}(165^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 1 - 2\,\mathrm{Sin}(15^o)^2 & .2 = 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)\mathrm{Cos}\left(\frac{\pi}{8}\right) \\ .3 = \frac{\mathrm{Tan}(25^o) + \mathrm{Tan}(20^o)}{1 - \mathrm{Tan}(25^o)\,\mathrm{Tan}(20^o)} & .4 = \mathrm{Cos}\left(\frac{\pi}{9}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) - \mathrm{Sin}\left(\frac{\pi}{9}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) \\ .5 = 2\,\mathrm{Cos}(22.5^o)^2 - 1 & .6 = \mathrm{Cos}\left(\frac{4\pi}{9}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) + \mathrm{Sin}\left(\frac{4\pi}{9}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) \\ .7 = \mathrm{Sin}(20^o)\,\mathrm{Cos}(40^o) + \mathrm{Cos}(20^o)\,\mathrm{Sin}(40^o) & .8 = \mathrm{Sin}\left(\frac{5\pi}{18}\right)\mathrm{Cos}\left(\frac{\pi}{9}\right) - \mathrm{Cos}\left(\frac{5\pi}{18}\right)\mathrm{Sin}\left(\frac{\pi}{9}\right) \\ .9 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^2} & .10 = \mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{12}\right)^2 \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.12557

$$No1 = \begin{bmatrix} .1 = \operatorname{Cos}\left(\frac{5\pi}{12}\right) & .2 = \operatorname{Sin}(105^o) \\ .3 = \operatorname{Tan}\left(\frac{\pi}{12}\right) & .4 = \operatorname{Tan}\left(-\frac{13\pi}{12}\right) \\ .5 = \operatorname{Sec}(195^o) & .6 = \operatorname{Sin}((-165)^o) \\ .7 = \operatorname{Csc}\left(-\frac{5\pi}{12}\right) & .8 = \operatorname{Cos}\left(\frac{23\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\operatorname{Cos}\left(\frac{\pi}{12}\right)^2 - 1 & .2 = 1 - 2\operatorname{Sin}(15^o)^2 \\ .3 = 2\operatorname{Sin}(22.5^o)\operatorname{Cos}(22.5^o) & .4 = \operatorname{Cos}\left(\frac{\pi}{8}\right)^2 - \operatorname{Sin}\left(\frac{\pi}{8}\right)^2 \\ .5 = \operatorname{Cos}\left(\frac{11\pi}{60}\right)\operatorname{Cos}\left(\frac{\pi}{15}\right) - \operatorname{Sin}\left(\frac{11\pi}{60}\right)\operatorname{Sin}\left(\frac{\pi}{15}\right) & .6 = \operatorname{Sin}(25^o)\operatorname{Cos}(35^o) + \operatorname{Cos}(25^o)\operatorname{Sin}(35^o) \\ .7 = \operatorname{Sin}\left(\frac{7\pi}{36}\right)\operatorname{Cos}\left(\frac{\pi}{36}\right) - \operatorname{Cos}\left(\frac{7\pi}{36}\right)\operatorname{Sin}\left(\frac{\pi}{36}\right) & .8 = \frac{\operatorname{Tan}\left(\frac{19\pi}{60}\right) - \operatorname{Tan}\left(\frac{\pi}{15}\right)}{1 + \operatorname{Tan}\left(\frac{19\pi}{60}\right)\operatorname{Tan}\left(\frac{\pi}{15}\right)} \\ .9 = \frac{\operatorname{Tan}(10^o) + \operatorname{Tan}(20^o)}{1 - \operatorname{Tan}(10^o)\operatorname{Tan}(20^o)} & .10 = \frac{2\operatorname{Tan}(15^o)}{1 - \operatorname{Tan}(15^o)^2} \end{bmatrix}, , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix} P \\ V \\ S \\ S \end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.12637

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Cos}(75^o) \\ .3 = \mathrm{Tan}(105^o) & .4 = \mathrm{Csc}((-345)^o) \\ .5 = \mathrm{Cot}\left(-\frac{17\pi}{12}\right) & .6 = \mathrm{Sec}(345^o) \\ .7 = \mathrm{Cos}\left(-\frac{7\pi}{12}\right) & .8 = \mathrm{Sin}\left(-\frac{\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = 2\,\mathrm{Sin}(15^o)\,\mathrm{Cos}(15^o) & .2 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^2 \\ .3 = \mathrm{Cos}(22.5^o)^2 - \mathrm{Sin}(22.5^o)^2 & .4 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - 1 \\ .5 = \mathrm{Cos}\left(\frac{\pi}{9}\right)\mathrm{Cos}\left(\frac{5\pi}{36}\right) - \mathrm{Sin}\left(\frac{\pi}{9}\right)\mathrm{Sin}\left(\frac{5\pi}{36}\right) & .6 = \frac{\mathrm{Tan}(48^o) + \mathrm{Tan}(12^o)}{1 - \mathrm{Tan}(48^o)\,\mathrm{Tan}(12^o)} \\ .7 = \mathrm{Cos}\left(\frac{17\pi}{30}\right)\mathrm{Cos}\left(\frac{\pi}{15}\right) + \mathrm{Sin}\left(\frac{17\pi}{30}\right)\mathrm{Sin}\left(\frac{\pi}{15}\right) & .8 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^2} \\ .9 = \frac{\mathrm{Tan}(60^o) - \mathrm{Tan}(15^o)}{1 + \mathrm{Tan}(60^o)\,\mathrm{Tan}(15^o)} & .10 = \mathrm{Sin}(18^o)\,\mathrm{Cos}(12^o) + \mathrm{Cos}(18^o)\,\mathrm{Sin}(12^o) \end{bmatrix}, , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.12689

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Cos}(105^o) \\ .3 = \mathrm{Tan}\left(\frac{5\pi}{12}\right) & .4 = \mathrm{Csc}(345^o) \\ .5 = \mathrm{Cos}\left(-\frac{13\pi}{12}\right) & .6 = \mathrm{Sin}((-105)^o) \\ .7 = \mathrm{Cot}\left(-\frac{23\pi}{12}\right) & .8 = \mathrm{Tan}((-165)^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Sin}(70^o)\mathrm{Cos}(10^o) - \mathrm{Cos}(70^o)\mathrm{Sin}(10^o) & .2 = \mathrm{Cos}(22.5^o)^2 - \mathrm{Sin}(22.5^o)^2 \\ .3 = \mathrm{Cos}(12^o)\mathrm{Cos}(33^o) - \mathrm{Sin}(12^o)\mathrm{Sin}(33^o) & .4 = \frac{2\,\mathrm{Tan}(15^o)}{1-\mathrm{Tan}(15^o)^2} \\ .5 = \frac{\mathrm{Tan}(60^o)-\mathrm{Tan}(15^o)}{1+\mathrm{Tan}(60^o)\mathrm{Tan}(15^o)} & .6 = \mathrm{Cos}\left(\frac{7\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{36}\right) + \mathrm{Sin}\left(\frac{7\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{36}\right) \\ .7 = \frac{\mathrm{Tan}\left(\frac{4\pi}{15}\right)+\mathrm{Tan}\left(\frac{\pi}{15}\right)}{1-\mathrm{Tan}\left(\frac{4\pi}{15}\right)\mathrm{Tan}\left(\frac{\pi}{15}\right)} & .8 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) \\ .9 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^2 & .10 = 2\,\mathrm{Cos}(15^o)^2 - 1 \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.13349

$$No1=\begin{bmatrix} .1=\cos\left(\frac{5\pi}{12}\right) & .2=\sin(105^o) \\ .3=\tan(15^o) & .4=\tan\left(\frac{13\pi}{12}\right) \\ .5=\cos((-165)^o) & .6=\cot\left(-\frac{19\pi}{12}\right) \\ .7=\csc(165^o) & .8=\sec((-345)^o)\end{bmatrix},\ No2=\begin{bmatrix} .1=\cos\left(\frac{\pi}{8}\right)^2-\sin\left(\frac{\pi}{8}\right)^2 & .2=\frac{\tan(42^o)-\tan(12^o)}{1+\tan(42^o)\tan(12^o)} \\ .3=\frac{\tan\left(\frac{\pi}{15}\right)+\tan\left(\frac{\pi}{10}\right)}{1-\tan\left(\frac{\pi}{15}\right)\tan\left(\frac{\pi}{10}\right)} & .4=2\sin(22.5^o)\cos(22.5^o) \\ .5=1-2\sin\left(\frac{\pi}{12}\right)^2 & .6=2\cos(15^o)^2-1 \\ .7=\sin(50^o)\cos(10^o)+\cos(50^o)\sin(10^o) & .8=\cos\left(\frac{\pi}{18}\right)\cos\left(\frac{4\pi}{9}\right)-\sin\left(\frac{\pi}{18}\right)\sin\left(\frac{4\pi}{9}\right) \\ .9=\sin(85^o)\cos(25^o)-\cos(85^o)\sin(25^o) & .10=\frac{2\tan\left(\frac{\pi}{12}\right)}{1-\tan\left(\frac{\pi}{12}\right)^2}\end{bmatrix},\ ,\begin{bmatrix} \underline{:)} \\ :(\\ \left[\left[\begin{matrix}P\\V\\S\\S\end{matrix}\right]\right] \\ \& \\ \left[\left[\begin{matrix}M\\a\\t\\h\\@\\M\\U\\T\end{matrix}\right]\right] \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.13519

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Cos}(105^o) \\ .3 = \mathrm{Tan}\left(\frac{5\pi}{12}\right) & .4 = \mathrm{Sec}(165^o) \\ .5 = \mathrm{Cot}\left(-\frac{13\pi}{12}\right) & .6 = \mathrm{Cos}\left(-\frac{11\pi}{12}\right) \\ .7 = \mathrm{Tan}(195^o) & .8 = \mathrm{Csc}(345^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Cos}(35^o)\,\mathrm{Cos}(5^o) + \mathrm{Sin}(35^o)\,\mathrm{Sin}(5^o) & .2 = \mathrm{Sin}\left(\frac{17\pi}{36}\right)\mathrm{Cos}\left(\frac{5\pi}{36}\right) - \mathrm{Cos}\left(\frac{17\pi}{36}\right)\mathrm{Sin}\left(\frac{5\pi}{36}\right) \\ .3 = \mathrm{Cos}\left(\frac{5\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{36}\right) - \mathrm{Sin}\left(\frac{5\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{36}\right) & .4 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^2} \\ .5 = 2\,\mathrm{Cos}(15^o)^2 - 1 & .6 = \frac{\mathrm{Tan}\left(\frac{\pi}{3}\right) - \mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 + \mathrm{Tan}\left(\frac{\pi}{3}\right)\mathrm{Tan}\left(\frac{\pi}{12}\right)} \\ .7 = \mathrm{Sin}(33^o)\,\mathrm{Cos}(12^o) + \mathrm{Cos}(33^o)\,\mathrm{Sin}(12^o) & .8 = 2\,\mathrm{Sin}(22.5^o)\,\mathrm{Cos}(22.5^o) \\ .9 = \mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{8}\right)^2 & .10 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)^2 \end{bmatrix}, \quad, \begin{bmatrix} :) \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ :) \\ :(\\ :) \\ :(\end{bmatrix}$$

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

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

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

TrigonometryExercise4 for No.14276

$$No1 = \begin{bmatrix} .1 = \sin(75^o) & .2 = \cos\left(\frac{\pi}{12}\right) \\ .3 = \tan\left(\frac{7\pi}{12}\right) & .4 = \tan\left(\frac{11\pi}{12}\right) \\ .5 = \sin((-15)^o) & .6 = \csc((-345)^o) \\ .7 = \cos\left(-\frac{13\pi}{12}\right) & .8 = \sec(345^o) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \cos(18^o)\cos(12^o) - \sin(18^o)\sin(12^o) & .2 = \dfrac{\tan\left(\frac{7\pi}{18}\right) - \tan\left(\frac{\pi}{18}\right)}{1 + \tan\left(\frac{7\pi}{18}\right)\tan\left(\frac{\pi}{18}\right)} \\ .3 = \sin\left(\frac{\pi}{18}\right)\cos\left(\frac{4\pi}{9}\right) + \cos\left(\frac{\pi}{18}\right)\sin\left(\frac{4\pi}{9}\right) & .4 = \dfrac{2\tan(15^o)}{1 - \tan(15^o)^2} \\ .5 = 2\cos(22.5^o)^2 - 1 & .6 = \cos(50^o)\cos(20^o) + \sin(50^o)\sin(20^o) \\ .7 = \cos\left(\frac{\pi}{12}\right)^2 - \sin\left(\frac{\pi}{12}\right)^2 & .8 = 2\sin(15^o)\cos(15^o) \\ .9 = \sin\left(\frac{\pi}{3}\right)\cos\left(\frac{\pi}{12}\right) - \cos\left(\frac{\pi}{3}\right)\sin\left(\frac{\pi}{12}\right) & .10 = 1 - 2\sin\left(\frac{\pi}{8}\right)^2 \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

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TrigonometryExercise4 for No.14380

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}(105^o) & .2 = \mathrm{Sin}\left(\frac{\pi}{12}\right) \\ .3 = \mathrm{Tan}(75^o) & .4 = \mathrm{Cot}((-345)^o) \\ .5 = \mathrm{Csc}\left(\frac{19\pi}{12}\right) & .6 = \mathrm{Tan}\left(-\frac{7\pi}{12}\right) \\ .7 = \mathrm{Sec}(255^o) & .8 = \mathrm{Sin}\left(-\frac{17\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{\pi}{18}\right)\mathrm{Cos}\left(\frac{4\pi}{9}\right) + \mathrm{Cos}\left(\frac{\pi}{18}\right)\mathrm{Sin}\left(\frac{4\pi}{9}\right) & .2 = \mathrm{Cos}(100^o)\,\mathrm{Cos}(10^o) + \mathrm{Sin}(100^o)\,\mathrm{Sin}(10^o) \\ .3 = 2\,\mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - 1 & .4 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) \\ .5 = \mathrm{Cos}(22.5^o)^2 - \mathrm{Sin}(22.5^o)^2 & .6 = \mathrm{Sin}(70^o)\,\mathrm{Cos}(10^o) - \mathrm{Cos}(70^o)\,\mathrm{Sin}(10^o) \\ .7 = \dfrac{\mathrm{Tan}\left(\frac{2\pi}{9}\right) - \mathrm{Tan}\left(\frac{\pi}{18}\right)}{1 + \mathrm{Tan}\left(\frac{2\pi}{9}\right)\mathrm{Tan}\left(\frac{\pi}{18}\right)} & .8 = 1 - 2\,\mathrm{Sin}(15^o)^2 \\ .9 = \dfrac{\mathrm{Tan}\left(\frac{\pi}{12}\right) + \mathrm{Tan}\left(\frac{\pi}{6}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)\mathrm{Tan}\left(\frac{\pi}{6}\right)} & .10 = \dfrac{2\,\mathrm{Tan}\left(\frac{\pi}{12}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{12}\right)^2} \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

$$No6 = [Cond = (\mathrm{Cos}(56^o) = 0.559), Question = \mathrm{Sin}(28^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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TrigonometryExercise4 for No.14393

$$No1 = \begin{bmatrix} .1 = \mathrm{Cos}(75^o) & .2 = \mathrm{Sin}\left(\frac{7\pi}{12}\right) \\ .3 = \mathrm{Tan}(15^o) & .4 = \mathrm{Csc}((-285)^o) \\ .5 = \mathrm{Tan}\left(\frac{19\pi}{12}\right) & .6 = \mathrm{Sin}\left(-\frac{\pi}{12}\right) \\ .7 = \mathrm{Sec}((-75)^o) & .8 = \mathrm{Cot}\left(\frac{11\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \dfrac{\mathrm{Tan}\left(\frac{7\pi}{30}\right) - \mathrm{Tan}\left(\frac{\pi}{15}\right)}{1 + \mathrm{Tan}\left(\frac{7\pi}{30}\right)\mathrm{Tan}\left(\frac{\pi}{15}\right)} & .2 = 1 - 2\,\mathrm{Sin}(22.5^o)^2 \\ .3 = \dfrac{2\,\mathrm{Tan}(15^o)}{1 - \mathrm{Tan}(15^o)^2} & .4 = 2\,\mathrm{Cos}(15^o)^2 - 1 \\ .5 = \dfrac{\mathrm{Tan}\left(\frac{\pi}{9}\right) + \mathrm{Tan}\left(\frac{5\pi}{36}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{9}\right)\mathrm{Tan}\left(\frac{5\pi}{36}\right)} & .6 = \mathrm{Cos}\left(\frac{\pi}{9}\right)\mathrm{Cos}\left(\frac{2\pi}{9}\right) - \mathrm{Sin}\left(\frac{\pi}{9}\right)\mathrm{Sin}\left(\frac{2\pi}{9}\right) \\ .7 = 2\,\mathrm{Sin}\left(\frac{\pi}{12}\right)\mathrm{Cos}\left(\frac{\pi}{12}\right) & .8 = \mathrm{Cos}\left(\frac{\pi}{8}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{8}\right)^2 \\ .9 = \mathrm{Sin}(5^o)\,\mathrm{Cos}(25^o) + \mathrm{Cos}(5^o)\,\mathrm{Sin}(25^o) & .10 = \mathrm{Sin}(110^o)\,\mathrm{Cos}(20^o) - \mathrm{Cos}(110^o)\,\mathrm{Sin}(20^o) \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

$$No6 = [Cond = (\mathrm{Cos}(10^o) = 0.985), Question = \mathrm{Sin}(5^o)], \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

TrigonometryExercise4 for No.14417

$$No1 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{\pi}{12}\right) & .2 = \mathrm{Cos}(105^o) \\ .3 = \mathrm{Tan}(75^o) & .4 = \mathrm{Sec}((-105)^o) \\ .5 = \mathrm{Csc}\left(-\frac{23\pi}{12}\right) & .6 = \mathrm{Cos}(165^o) \\ .7 = \mathrm{Tan}\left(-\frac{11\pi}{12}\right) & .8 = \mathrm{Sin}\left(-\frac{5\pi}{12}\right) \end{bmatrix}, No2 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\frac{11\pi}{36}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) - \mathrm{Cos}\left(\frac{11\pi}{36}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .2 = 1 - 2\,\mathrm{Sin}\left(\frac{\pi}{8}\right)^2 \\ .3 = \frac{\mathrm{Tan}(10^o) + \mathrm{Tan}(20^o)}{1 - \mathrm{Tan}(10^o)\,\mathrm{Tan}(20^o)} & .4 = 2\,\mathrm{Cos}(22.5^o)^2 - 1 \\ .5 = \mathrm{Cos}\left(\frac{2\pi}{9}\right)\mathrm{Cos}\left(\frac{\pi}{18}\right) + \mathrm{Sin}\left(\frac{2\pi}{9}\right)\mathrm{Sin}\left(\frac{\pi}{18}\right) & .6 = 2\,\mathrm{Sin}(15^o)\,\mathrm{Cos}(15^o) \\ .7 = \mathrm{Cos}(30^o)\,\mathrm{Cos}(15^o) - \mathrm{Sin}(30^o)\,\mathrm{Sin}(15^o) & .8 = \mathrm{Cos}\left(\frac{\pi}{12}\right)^2 - \mathrm{Sin}\left(\frac{\pi}{12}\right)^2 \\ .9 = \frac{2\,\mathrm{Tan}\left(\frac{\pi}{8}\right)}{1 - \mathrm{Tan}\left(\frac{\pi}{8}\right)^2} & .10 = \frac{\mathrm{Tan}(72^o) - \mathrm{Tan}(12^o)}{1 + \mathrm{Tan}(72^o)\,\mathrm{Tan}(12^o)} \end{bmatrix}, \quad , \begin{bmatrix} \underline{:)} \\ :(\\ \begin{bmatrix}\begin{bmatrix} P \\ V \\ S \\ S \end{bmatrix}\end{bmatrix} \\ \& \\ \begin{bmatrix}\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\end{bmatrix} \\ \underline{:)} \\ :(\\ \underline{:)} \\ :(\end{bmatrix}$$

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

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

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

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