แบบฝึกหัดเรื่อง ตรีโกณมิติ

ชื่อ-นามสกุล .....

เลขประจำตัว No. 2

1. จงหาค่าของ

1.1) $\arcsin(\sqrt{2}) =$ ไม่นิยาม

1.2) $\arccos(\frac{1}{2}) =$ $\frac{\pi}{3}$

1.3) $\arcsin(-\frac{\sqrt{3}}{2}) =$ $-\frac{\pi}{3}$

1.4) $\arcsin(1) =$ $\frac{\pi}{2}$

1.5) $\arctan(-1) =$ $-\frac{\pi}{4}$

1.6) $\arccos(-\frac{\sqrt{2}}{2}) =$ $\frac{3\pi}{4}$

1.7) $\arcsin(\frac{\sqrt{2}}{2}) =$ $\frac{\pi}{4}$

1.8) $\arctan(0) =$ 0

1.9) $\arccos(-1) =$ π

2. จงหาค่าของ

2.1) $\cos(\arccos(\frac{\sqrt{3}}{2})) =$ $\frac{\sqrt{3}}{2}$

2.2) $\cos(\arcsin(\frac{\sqrt{3}}{2})) =$ $\sqrt{1-(\frac{\sqrt{3}}{2})^2} = \frac{1}{2}$

2.3) $\tan(\arccos(-\frac{\sqrt{3}}{2})) =$ $\tan(\pi - \arccos(\frac{\sqrt{3}}{2})) = \tan(\frac{5\pi}{6}) = -\frac{\sqrt{3}}{3}$

2.4) $\sin(\arctan(1)) =$ $\sin(\frac{\pi}{4}) = \frac{\sqrt{2}}{2}$

2.5) $\arctan(\tan(-\frac{\pi}{6})) =$ $\arctan(-\frac{1}{\sqrt{3}}) = -\frac{\pi}{6}$

2.6) $\arcsin(\cos(\frac{\pi}{3})) =$ $\arcsin(\frac{1}{2}) = \frac{\pi}{6}$

2.7) $\arcsin(\sin(-\frac{5\pi}{6})) =$ $\arcsin(-\sin(\frac{5\pi}{6})) = \arcsin(-\frac{1}{2}) = -\frac{\pi}{6}$

2.8) $\arccos(\cos(\frac{8\pi}{3})) =$ $\arccos(\cos(\frac{2\pi}{3})) = \arccos(-\frac{1}{2}) = \frac{2\pi}{3}$

2.9) $\arctan(\tan(\frac{17\pi}{6})) =$ $\arctan(-\frac{1}{\sqrt{3}}) = -\frac{\pi}{6}$

2.10) $\sec(\arctan(-\frac{\sqrt{3}}{3})) =$ $\sec(-\frac{\pi}{6}) = \sec\frac{\pi}{6} = \frac{2\sqrt{3}}{3}$

2.11) $\sec(\arccos(\sin(-\frac{7\pi}{6}))) =$ $\sec(\arccos(\sin\frac{\pi}{6})) = \sec(\frac{\pi}{3}) = 2$

2.12) $\arccos(\sin(\arccos(\frac{\sqrt{2}}{2}))) =$ $\arccos(\sin(\frac{\pi}{4})) = \arccos(\frac{\sqrt{2}}{2}) = \frac{\pi}{4}$

3. จงหาค่าของ

3.1) $\csc\left(\arcsin\left(-\frac{1}{4}\right)\right) =$

$\csc\left(\arcsin\left(-\frac{1}{4}\right)\right) = \frac{1}{\sin\left(\arcsin\left(-\frac{1}{4}\right)\right)}$

$= \frac{1}{\sin\left(-\arcsin\left(\frac{1}{4}\right)\right)}$

$= \frac{1}{-\sin\left(\arcsin\left(\frac{1}{4}\right)\right)} = \frac{1}{\left(-\frac{1}{4}\right)}$

$= \boxed{-4}$

3.2) $\sec\left(\arccos\left(-\frac{5}{8}\right)\right) =$

$\sec\left(\arccos\left(-\frac{5}{8}\right)\right) = \frac{1}{\cos\left(\arccos\left(-\frac{5}{8}\right)\right)}$

$= \frac{1}{\cos\left(\pi - \arccos\left(\frac{5}{8}\right)\right)}$

$= \frac{1}{-\cos\left(\arccos\left(\frac{5}{8}\right)\right)} = \frac{1}{\left(-\frac{5}{8}\right)}$

$= \boxed{-\frac{8}{5}}$

3.3) $\cot\left(\arctan\left(\frac{\sqrt{7}}{2}\right)\right) =$

$= \frac{1}{\tan\left(\arctan\left(\frac{\sqrt{7}}{2}\right)\right)}$

$= \frac{1}{\frac{\sqrt{7}}{2}} = \frac{2}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}}$

$= \boxed{\frac{2\sqrt{7}}{7}}$

3.4) $\cos\left(\arctan\left(\frac{2}{7}\right)\right) =$

$= \frac{1}{\sqrt{1+\left(\frac{2}{7}\right)^2}} = \frac{1}{\sqrt{1+\frac{4}{49}}}$

$= \frac{7}{\sqrt{53}} \times \frac{\sqrt{53}}{\sqrt{53}}$

$= \boxed{\frac{7\sqrt{53}}{53}}$

3.5) $\cos\left(\arcsin\left(\frac{1}{5}\right)\right) =$

$\cos\left(\arcsin\left(\frac{1}{5}\right)\right) = \sqrt{1-\left(\frac{1}{5}\right)^2}$

$= \sqrt{1-\frac{1}{25}} = \sqrt{\frac{24}{25}}$

$= \boxed{\frac{2\sqrt{6}}{5}}$

3.6) $\sin\left(\arctan\left(-\frac{7}{6}\right)\right) =$

$\sin\left(\arctan\left(-\frac{7}{6}\right)\right) = \sin\left(-\arctan\left(\frac{7}{6}\right)\right)$

$= -\sin\left(\arctan\left(\frac{7}{6}\right)\right)$

$= -\frac{\left(\frac{7}{6}\right)}{\sqrt{1+\left(\frac{7}{6}\right)^2}} = \frac{-\left(\frac{7}{6}\right)}{\frac{\sqrt{85}}{6}}$

$= \frac{-7}{\sqrt{85}} = \boxed{\frac{-7\sqrt{85}}{\sqrt{85}}}$

3.7) $\sin\left(\arccos\left(\frac{2}{3}\right)\right) =$

$\sin\left(\arccos\left(\frac{2}{3}\right)\right) = \sqrt{1-\left(\frac{2}{3}\right)^2}$

$= \sqrt{\frac{5}{9}} = \boxed{\frac{\sqrt{5}}{3}}$

3.8) $\tan\left(\arcsin\left(\frac{\sqrt{5}}{7}\right)\right) =$

$\tan\left(\arcsin\left(\frac{\sqrt{5}}{7}\right)\right) = \frac{\left(\frac{\sqrt{5}}{7}\right)}{\sqrt{1-\left(\frac{\sqrt{5}}{7}\right)^2}}$

$= \frac{\left(\frac{\sqrt{5}}{7}\right)}{\frac{\sqrt{44}}{7}} = \frac{\sqrt{5}}{\sqrt{44}}$

$= \boxed{\frac{\sqrt{5}\cdot\sqrt{11}}{22}} = \boxed{\frac{\sqrt{55}}{22}}$

3.9) $\tan\left(\arccos\left(-\frac{\sqrt{3}}{7}\right)\right) =$

$= \tan\left(\pi - \arccos\left(\frac{\sqrt{3}}{7}\right)\right)$

$= -\tan\left(\arccos\left(\frac{\sqrt{3}}{7}\right)\right)$

$= \frac{-\sqrt{1-\left(\frac{\sqrt{3}}{7}\right)^2}}{\left(\frac{\sqrt{3}}{7}\right)} = \frac{-\sqrt{\frac{49-3}{49}}}{\frac{\sqrt{3}}{7}} = \frac{-\frac{\sqrt{46}}{7}}{\frac{\sqrt{3}}{7}}$

$= \frac{-\sqrt{46}}{\sqrt{3}} = \boxed{\frac{-\sqrt{46}\cdot\sqrt{3}}{3}} \times 10 \boxed{-\frac{\sqrt{138}}{3}}$

4. จงหาค่าของ

4.1) $\sin\left(\arccos\left(\frac{4}{7}\right)+\arcsin\left(\frac{-2}{3}\right)\right)$ =

$\sin\left(\arccos\left(\frac{4}{7}\right)-\arcsin\left(\frac{2}{7}\right)\right)$

$=\sin\left(\arccos\left(\frac{4}{7}\right)\right)\cdot\cos\left(\arcsin\left(\frac{2}{3}\right)\right)-\cos\left(\arccos\left(\frac{4}{7}\right)\right)\cdot\sin\left(\arcsin\frac{2}{3}\right)$

$=\sqrt{1-\left(\frac{4}{7}\right)^2}\cdot\sqrt{1-\left(\frac{2}{3}\right)^2}-\frac{4}{7}\left(\frac{2}{3}\right)$

$=\frac{\sqrt{33}\cdot\sqrt{5}}{21}-\frac{8}{21}$ หรือ $\frac{\sqrt{165}}{21}-\frac{8}{21}$

4.2) $\cos\left(\arccos\left(\frac{5}{8}\right)+\arcsin\left(\frac{3}{5}\right)\right)$ =

$=\cos\left(\arccos\left(\frac{5}{8}\right)\right)\cdot\cos\left(\arcsin\left(\frac{3}{5}\right)\right)-\sin\left(\arccos\left(\frac{5}{8}\right)\right)\sin\left(\arcsin\left(\frac{3}{5}\right)\right)$

$=\frac{5}{8}\times\sqrt{1-\left(\frac{3}{5}\right)^2}-\sqrt{1-\left(\frac{5}{8}\right)^2}\cdot\left(\frac{3}{5}\right)$

$=\frac{1}{2}-\frac{3\sqrt{39}}{40}$

4.3) $\sin\left(2\arcsin\left(\frac{1}{2}\right)\right)$ =

$\sin\left(2\arcsin\left(\frac{1}{2}\right)\right)=2\sin\left(\arcsin\left(\frac{1}{2}\right)\right)\cdot\cos\left(\arcsin\left(\frac{1}{2}\right)\right)$

$=2\left(\frac{1}{2}\right)\cdot\sqrt{1-\left(\frac{1}{2}\right)^2}$

$=\sqrt{\frac{4-1}{4}}=\sqrt{\frac{3}{4}}$

$=\frac{\sqrt{3}}{2}$

4.4) $\cos\left(2\arcsin\left(\frac{1}{3}\right)\right)$ =

$\cos\left(2\arcsin\left(\frac{1}{3}\right)\right)=2\left(\cos\left(\arcsin\left(\frac{1}{3}\right)\right)\right)^2-1$

$=2\left(\sqrt{1-\left(\frac{1}{3}\right)^2}\right)^2-1$

$=2\left(\frac{8}{9}\right)-1=\frac{7}{9}$

4.5) $\arctan\left(\cos\left(\frac{9\pi}{2}\right)+\sin\left(-\frac{5\pi}{2}\right)\right)$ =

$\arctan\left(\cos\left(\frac{9\pi}{2}\right)-\sin\left(\frac{5\pi}{2}\right)\right)=\arctan\left(\cos\frac{\pi}{2}-\sin\frac{\pi}{2}\right)$

$=\arctan(-1)=-\arctan(1)$

$=-\frac{\pi}{4}$

4.6) $\csc\left(\arccos\left(\sin\left(\frac{13\pi}{6}\right)\right)+\arcsin\left(\cos\left(\frac{10\pi}{3}\right)\right)\right)$ =

$\csc\left(\arccos\left(\sin\frac{\pi}{6}\right)+\arcsin\left(-\cos\frac{\pi}{3}\right)\right)$

$=\csc\left(\arccos\left(\frac{1}{2}\right)-\arcsin\left(\frac{1}{2}\right)\right)=\frac{1}{\sin\left(\arccos\left(\frac{1}{2}\right)-\arcsin\left(\frac{1}{2}\right)\right)}$

$=\frac{1}{\sqrt{1-\left(\frac{1}{2}\right)^2}\cdot\sqrt{1-\left(\frac{1}{2}\right)^2}-\frac{1}{2}\cdot\frac{1}{2}}=\frac{1}{\frac{1}{2}}=2$

5. จงหา *Question* = $\sin(2\arcsin(\alpha))$

เมื่อ $0<\alpha\leq 1$

$\sin\left(2\arcsin(\alpha)\right)=2\sin\left(\arcsin(\alpha)\right)\cdot\cos\left(\arcsin(\alpha)\right)$

$=2\alpha\cdot\sqrt{1-\alpha^2}$

6. จงหา *Question* = $\cos(2\arccos(\alpha))$

เมื่อ $0<\alpha\leq 1$

$\cos\left(2\arccos(\alpha)\right)=1-2\left(\sin\left(\arccos(\alpha)\right)\right)^2$

$=1-2\left(\sqrt{1-\alpha^2}\right)^2$

$=1-2(1-\alpha^2)=1-2+2\alpha^2$

$=2\alpha^2-1$

TrigonometryExercise5 for No.2

$$No1 = \begin{bmatrix} .1 = \arcSin(\sqrt{2}) & .2 = \arcCos\left(\frac{1}{2}\right) & .3 = \arcSin\left(-\frac{\sqrt{3}}{2}\right) \\ .4 = \arcSin(1) & .5 = \arcTan(-1) & .6 = \arcCos\left(-\frac{\sqrt{2}}{2}\right) \\ .7 = \arcSin\left(\frac{\sqrt{2}}{2}\right) & .8 = \arcTan(0) & .9 = \arcCos(-1) \end{bmatrix}, \quad , \begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \\ ! \end{bmatrix}$$

$$No2 = \begin{bmatrix} .1 = \cos\left(\arcCos\left(\frac{\sqrt{3}}{2}\right)\right) & .2 = \mathrm{Cos}\left(\arcSin\left(\frac{\sqrt{3}}{2}\right)\right) & .3 = \mathrm{Tan}\left(\arcCos\left(-\frac{\sqrt{3}}{2}\right)\right) \\ .4 = \mathrm{Sin}(\arcTan(1)) & .5 = \arcTan\left(\mathrm{Tan}\left(-\frac{\pi}{6}\right)\right) & .6 = \arcSin\left(\mathrm{Cos}\left(\frac{\pi}{3}\right)\right) \\ .7 = \arcSin\left(\mathrm{Sin}\left(-\frac{5\pi}{6}\right)\right) & .8 = \arcCos\left(\mathrm{Cos}\left(\frac{8\pi}{3}\right)\right) & .9 = \arcTan\left(\mathrm{Tan}\left(\frac{17\pi}{6}\right)\right) \\ .10 = \mathrm{Sec}\left(\arcTan\left(-\frac{\sqrt{3}}{3}\right)\right) & .11 = \mathrm{Sec}\left(\arcCos\left(\mathrm{Sin}\left(-\frac{7\pi}{6}\right)\right)\right) & .12 = \mathrm{ArcCos}\left(\mathrm{Sin}\left(\mathrm{ArcCos}\left(\frac{\sqrt{2}}{2}\right)\right)\right) \end{bmatrix}, \quad , \begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \\ ! \end{bmatrix}$$

$$No3 = \begin{bmatrix} .1 = \mathrm{Csc}\left(\arcSin\left(\frac{-1}{4}\right)\right) & .2 = \mathrm{Sec}\left(\arcCos\left(\frac{-5}{8}\right)\right) & .3 = \mathrm{Cot}\left(\arcTan\left(\frac{\sqrt{7}}{2}\right)\right) \\ .4 = \mathrm{Cos}\left(\arcTan\left(\frac{2}{7}\right)\right) & .5 = \mathrm{Cos}\left(\arcSin\left(\frac{1}{5}\right)\right) & .6 = \mathrm{Sin}\left(\arcTan\left(\frac{-7}{6}\right)\right) \\ .7 = \mathrm{Sin}\left(\arcCos\left(\frac{2}{3}\right)\right) & .8 = \mathrm{Tan}\left(\arcSin\left(\frac{\sqrt{5}}{7}\right)\right) & .9 = \mathrm{Tan}\left(\arcCos\left(-\frac{\sqrt{3}}{7}\right)\right) \end{bmatrix}, \quad , \begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \\ ! \end{bmatrix}$$

$$No4 = \begin{bmatrix} .1 = \mathrm{Sin}\left(\arcCos\left(\frac{4}{7}\right) + \arcSin\left(\frac{-2}{3}\right)\right) & .2 = \mathrm{Cos}\left(\arcCos\left(\frac{5}{8}\right) + \arcSin\left(\frac{3}{5}\right)\right) \\ .3 = \mathrm{Sin}\left(2\,\arcSin\left(\frac{1}{2}\right)\right) & .4 = \cos\left(2\,\arcSin\left(\frac{1}{3}\right)\right) \\ .5 = \arcTan\left(\mathrm{Cos}\left(\frac{9\pi}{2}\right) + \mathrm{Sin}\left(-\frac{5\pi}{2}\right)\right) & .6 = \mathrm{Csc}\left(\arcCos\left(\mathrm{Sin}\left(\frac{13\pi}{6}\right)\right) + \arcSin\left(\mathrm{Cos}\left(\frac{10\pi}{3}\right)\right)\right) \end{bmatrix}, \quad , \begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \\ ! \end{bmatrix}$$

$$No5 = \mathrm{Sin}(2\,\arcSin(\alpha)), \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$No6 = \mathrm{Cos}(2\,\arcCos(\alpha)), \quad , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

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$$Ans1 = \begin{bmatrix} .1 = (\mathrm{arcSin}(\sqrt{2}) = undefined) & .2 = \left(\mathrm{arcCos}\left(\frac{1}{2}\right) = \frac{\pi}{3}\right) & .3 = \left(\mathrm{arcSin}\left(-\frac{\sqrt{3}}{2}\right) = -\frac{\pi}{3}\right) \\ .4 = \left(\mathrm{arcSin}(1) = \frac{\pi}{2}\right) & .5 = \left(\mathrm{arcTan}(-1) = -\frac{\pi}{4}\right) & .6 = \left(\mathrm{arcCos}\left(-\frac{\sqrt{2}}{2}\right) = \frac{3\pi}{4}\right) \\ .7 = \left(\mathrm{arcSin}\left(\frac{\sqrt{2}}{2}\right) = \frac{\pi}{4}\right) & .8 = (\mathrm{arcTan}(0) = 0) & .9 = (\mathrm{arcCos}(-1) = \pi) \end{bmatrix}, \ , \begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}$$

$$Ans2 = \begin{bmatrix} .1 = \left(\cos\left(\mathrm{arcCos}\left(\frac{\sqrt{3}}{2}\right)\right) = \frac{\sqrt{3}}{2}\right) & .2 = \left(\mathrm{Cos}\left(\mathrm{arcSin}\left(\frac{\sqrt{3}}{2}\right)\right) = \frac{1}{2}\right) & .3 = \left(\mathrm{Tan}\left(\mathrm{arcCos}\left(-\frac{\sqrt{3}}{2}\right)\right) = -\frac{\sqrt{3}}{3}\right) \\ .4 = \left(\mathrm{Sin}(\mathrm{arcTan}(1)) = \frac{\sqrt{2}}{2}\right) & .5 = \left(\mathrm{arcTan}\left(\mathrm{Tan}\left(-\frac{\pi}{6}\right)\right) = -\frac{\pi}{6}\right) & .6 = \left(\mathrm{arcSin}\left(\mathrm{Cos}\left(\frac{\pi}{3}\right)\right) = \frac{\pi}{6}\right) \\ .7 = \left(\mathrm{arcSin}\left(\mathrm{Sin}\left(-\frac{5\pi}{6}\right)\right) = -\frac{\pi}{6}\right) & .8 = \left(\mathrm{arcCos}\left(\mathrm{Cos}\left(\frac{8\pi}{3}\right)\right) = \frac{2\pi}{3}\right) & .9 = \left(\mathrm{arcTan}\left(\mathrm{Tan}\left(\frac{17\pi}{6}\right)\right) = -\frac{\pi}{6}\right) \\ .10 = \left(\mathrm{Sec}\left(\mathrm{arcTan}\left(-\frac{\sqrt{3}}{3}\right)\right) = \frac{2\sqrt{3}}{3}\right) & .11 = \left(\mathrm{Sec}\left(\mathrm{arcCos}\left(\mathrm{Sin}\left(-\frac{7\pi}{6}\right)\right)\right) = 2\right) & .12 = \left(\mathrm{ArcCos}\left(\mathrm{Sin}\left(\mathrm{ArcCos}\left(\frac{\sqrt{2}}{2}\right)\right)\right) = \mathrm{arcCos}\left(\frac{\sqrt{2}}{2}\right)\right) \end{bmatrix}, \ , \begin{bmatrix} \underline{:)} \\ :(\\ \left[\begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}\right] \\ \underline{:)} \\ :(\end{bmatrix}$$

$$Ans3 = \begin{bmatrix} .1 = \left(\mathrm{Csc}\left(\mathrm{arcSin}\left(\frac{-1}{4}\right)\right) = -4\right) & .2 = \left(\mathrm{Sec}\left(\mathrm{arcCos}\left(\frac{-5}{8}\right)\right) = \frac{-8}{5}\right) & .3 = \left(\mathrm{Cot}\left(\mathrm{arcTan}\left(\frac{\sqrt{7}}{2}\right)\right) = \frac{2\sqrt{7}}{7}\right) \\ .4 = \left(\mathrm{Cos}\left(\mathrm{arcTan}\left(\frac{2}{7}\right)\right) = \frac{7\sqrt{53}}{53}\right) & .5 = \left(\mathrm{Cos}\left(\mathrm{arcSin}\left(\frac{1}{5}\right)\right) = \frac{2\sqrt{6}}{5}\right) & .6 = \left(\mathrm{Sin}\left(\mathrm{arcTan}\left(\frac{-7}{6}\right)\right) = -\frac{7\sqrt{85}}{85}\right) \\ .7 = \left(\mathrm{Sin}\left(\mathrm{arcCos}\left(\frac{2}{3}\right)\right) = \frac{\sqrt{5}}{3}\right) & .8 = \left(\mathrm{Tan}\left(\mathrm{arcSin}\left(\frac{\sqrt{5}}{7}\right)\right) = \frac{\sqrt{11}\sqrt{5}}{22}\right) & .9 = \left(\mathrm{Tan}\left(\mathrm{arcCos}\left(-\frac{\sqrt{3}}{7}\right)\right) = -\frac{\sqrt{3}\sqrt{46}}{3}\right) \end{bmatrix}, \ , \begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}$$

$$Ans4 = \begin{bmatrix} .1 = \left(\mathrm{Sin}\left(\mathrm{arcCos}\left(\frac{4}{7}\right) + \mathrm{arcSin}\left(\frac{-2}{3}\right)\right) = \frac{\sqrt{33}\sqrt{5}}{21} - \frac{8}{21}\right) & .2 = \left(\mathrm{Cos}\left(\mathrm{arcCos}\left(\frac{5}{8}\right) + \mathrm{arcSin}\left(\frac{3}{5}\right)\right) = \frac{1}{2} - \frac{3\sqrt{39}}{40}\right) \\ .3 = \left(\mathrm{Sin}\left(2\,\mathrm{arcSin}\left(\frac{1}{2}\right)\right) = \frac{\sqrt{3}}{2}\right) & .4 = \left(\cos\left(2\,\mathrm{arcSin}\left(\frac{1}{3}\right)\right) = \frac{7}{9}\right) \\ .5 = \left(\mathrm{arcTan}\left(\mathrm{Cos}\left(\frac{9\pi}{2}\right) + \mathrm{Sin}\left(-\frac{5\pi}{2}\right)\right) = -\frac{\pi}{4}\right) & .6 = \left(\mathrm{Csc}\left(\mathrm{arcCos}\left(\mathrm{Sin}\left(\frac{13\pi}{6}\right)\right) + \mathrm{arcSin}\left(\mathrm{Cos}\left(\frac{10\pi}{3}\right)\right)\right) = 2\right) \end{bmatrix}, \ , \begin{bmatrix} M \\ a \\ t \\ h \\ @ \\ M \\ U \\ T \end{bmatrix}$$

$$Ans5 = 2\alpha\sqrt{1-\alpha^2}, \ , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$

$$Ans6 = 2\alpha^2 - 1, \ , \begin{bmatrix} M \\ U \\ T \end{bmatrix}$$