

$$\tan \frac{11\pi}{9} + \sin \frac{10\pi}{9} \cos \frac{12\pi}{9}$$

$$-1 + -\frac{\sqrt{2}}{2} \times -\frac{\sqrt{2}}{2} = -\frac{1}{2} \checkmark$$

$$\tan \frac{14\pi}{9} \sin \frac{11\pi}{9} + \cos \frac{10\pi}{9}$$

$$-\frac{\sqrt{2}}{2} \times -\frac{\sqrt{2}}{2} + -\frac{1}{2} = +\frac{2}{2} + -\frac{1}{2} = 0 \checkmark$$

۲۰ عالی نوشتی!

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$$\cot x = 4$$

$$1 + \cot^2 x = \frac{1}{\sin^2 x}$$

$$14 = \frac{1}{\sin^2 x} \rightarrow \sin^2 x = \frac{1}{14} \rightarrow \sin x = \pm \frac{1}{\sqrt{14}}$$

$$\sin^2 x + \cos^2 x = 1 \quad \frac{1}{14} + \frac{14}{14} = 1$$

$$\cos x = \pm \frac{3}{\sqrt{14}}$$

$$\frac{\frac{12}{\sqrt{14}} - \frac{1}{\sqrt{14}}}{\frac{3+1}{\sqrt{14}}} = \frac{11}{4}$$

$$\frac{-\frac{12+1}{\sqrt{14}}}{\frac{-3-4}{\sqrt{14}}} = \frac{11}{-7} \checkmark$$

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$$\sin^2 x + \cos^2 x = 1$$

$$4\cos^2 x + \cos^2 x = 1$$

$$\cos^2 x = \frac{1}{5}$$

$$\cos x = \pm \frac{1}{\sqrt{5}} \rightarrow -\frac{1}{\sqrt{5}} \checkmark$$

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$$\cos\left(\frac{11\pi}{9} + \alpha\right) = \cos\left(\frac{2\pi}{9} + \alpha\right)$$

$$\cos \frac{2\pi}{9} \cos \alpha - \sin \frac{2\pi}{9} \sin \alpha$$

$$\frac{\sqrt{2}}{2} \cos \alpha - \frac{\sqrt{2}}{2} \sin \alpha$$

$$\cos \alpha = \sqrt{1 - \frac{1}{100}} = -\frac{\sqrt{99}}{100}$$

$$-\frac{\sqrt{2}}{2} \times -\frac{\sqrt{99}}{100} - \left(\frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{10}\right) = \frac{12}{100} = \frac{3}{25} \checkmark$$

$$\cos\left(\frac{11\pi}{9} + \alpha\right) = \frac{3}{25}$$

$$\sin\left(\frac{12\pi}{9} + \alpha\right) = -\sin\left(\frac{2\pi}{9} + \alpha\right)$$

$$\sin(A+B) = \sin A \cos B + \cos A \sin B$$

$$\sin \frac{2\pi}{9} \cos \alpha + \cos \frac{2\pi}{9} \sin \alpha$$

$$-\frac{\sqrt{2}}{2} (\cos \alpha + \sin \alpha) = -\frac{\sqrt{2}}{2} \times \frac{1}{\sqrt{2}} = -\frac{1}{2} \checkmark$$

$$1 + \tan^2 x = \frac{1}{\cos^2 x}$$

$$\cos^2 x = \frac{49}{100}$$

$$\sin^2 x = \frac{1}{100}$$

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$$\sin^2 x + \sin^2 x + \cos^2 x = \frac{5}{2}$$

$$\sin^2 x = \frac{1}{2}$$

$$\sin x = \pm \frac{\sqrt{2}}{2}$$

$$\cos^2 x = \frac{1}{2}$$

$$\frac{\sin^2 x}{\cos^2 x} = \tan^2 x = \frac{1}{1} \checkmark$$

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$$\frac{1}{2} a b \sin \alpha$$

$$\frac{1}{2} \times 9 \times \sqrt{5} \times \sin \alpha = F_{12}$$

$$r \sqrt{5} \times \sin \alpha = F_{12}$$

$$\frac{F_{12}}{r \sqrt{5}} \times \frac{\sqrt{5}}{\sqrt{5}} = \frac{F_{12} \sqrt{5}}{9 \times 1} = \frac{\sqrt{5}}{1} = \sin \alpha \quad \alpha = 40.61^\circ$$

$$\frac{1 \times 10}{40} = 1 \checkmark$$



$$r \times r \times \sin 120^\circ = r^2 \times \frac{\sqrt{3}}{2} = \omega F$$

$$r^2 = 1A$$

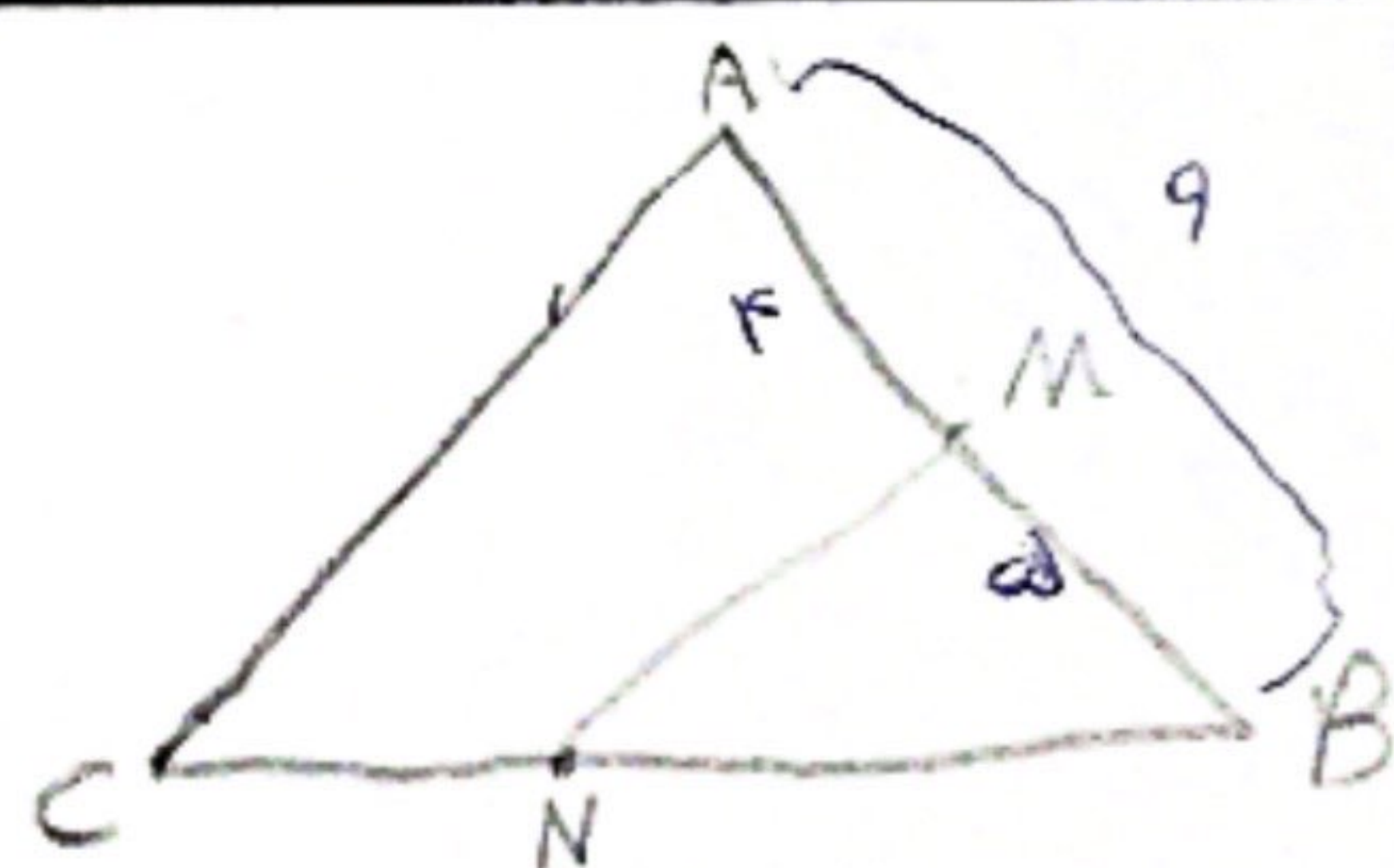
$$r = \pm \sqrt{1A}$$

$$r_{90} + r_{90} = 10r \rightarrow 10 \times \sqrt{5} = 10\sqrt{5} \checkmark$$

$$\frac{V \times \omega}{r} \times \sin A - \frac{V \times F}{r} \times \sin A = 1V \sin A - 1F \sin A = r \sin A = 1/V \sin A$$

$$\Rightarrow \sin A = \frac{1}{r} \Rightarrow \cos A = \frac{\sqrt{5}}{r}$$

$$\frac{\sin A}{\cos A} = \frac{\frac{1}{r}}{\frac{\sqrt{5}}{r}} = \frac{\sqrt{5}}{1} = \tan A$$



$$\frac{\frac{AB \times BC \times \sin B}{r}}{\frac{MB \times NB \times \sin B}{r}} = r$$

$$\frac{AB \times BC}{MB \times NB} = r$$

$$r \times NC = BC$$

$$AB \times r \times NC = r \times MB \times 1 \times NC$$

$$r \times AB = r \times MB \rightarrow$$

$$\frac{BM}{AB} = \frac{r \times a}{F_{12}} = \frac{a}{9}$$

$$\frac{BM}{AM} = \frac{a}{F} \checkmark$$

$$\frac{1}{\sqrt{\cos^2 \alpha}} = \frac{1}{|\cos \alpha|}$$

$$\frac{1}{|\cos \alpha|} - \tan \alpha = \frac{1 + \sin \alpha}{|\cos \alpha|}$$

$$- \tan \alpha = \frac{\sin \alpha}{|\cos \alpha|}$$

$$\left. \begin{aligned} \frac{|\sin \alpha|}{\cos \alpha} &= -\tan \alpha \rightarrow \cos \alpha < 0 \\ \frac{|\sin \alpha|}{\cos \alpha} &= \frac{\sin \alpha}{|\cos \alpha|} \rightarrow \sin \alpha < 0 \end{aligned} \right\} \text{البحر}$$