

1A, 2A

درایان با همی
 $\tan \frac{\pi}{8} + \sin \frac{\sqrt{2}\pi}{8} \cos \frac{\omega\pi}{8} = -1 + \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} = -1 + \frac{1}{2} = -\frac{1}{2}$ (1) (2A)

$\tan \frac{\omega\pi}{8} \sin \frac{\omega\pi}{8} + \cos \frac{\pi}{8} = -\frac{\sqrt{2}}{2} \times (-\frac{\sqrt{2}}{2}) + (-\frac{1}{2}) = \frac{1}{2} - \frac{1}{2} = 0$ (2) (2A)

$\frac{\sin \pi (\pi \cot \pi - 1)}{\sin \pi (\cot \pi + 1)} = \frac{12-1}{8+1} = \frac{11}{9}$ (2) (2A)

$\sin^2 \alpha + \cos^2 \alpha = 1 \quad (\pi \cos \alpha)^2 + \cos^2 \alpha = 1$

$\cos^2 \alpha \neq 1 \Rightarrow \cos^2 \alpha = \frac{1}{9} \quad \cos \alpha = -\frac{1}{3} = -\frac{\sqrt{9}}{9}$ (2) (2A)
 در ناحیه سوم

$\sin \alpha = \frac{\sqrt{2}}{10} \quad \cos \alpha = -\frac{\sqrt{12}}{10}$

$\cos(\frac{\pi}{8} + \alpha) = -\frac{\sqrt{2}}{10} \times \frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{10} \times \frac{\sqrt{2}}{2} = \frac{12}{10} - \frac{2}{10} = \frac{10}{10} = 1$ (2) (2A)

$5 \sin \alpha = \cos \alpha \quad \sin^2 \alpha + 25 \sin^2 \alpha = 1 \quad \sin^2 \alpha = \frac{1}{26} \quad \sin \alpha = \frac{\sqrt{26}}{26}$

$\cos \alpha = \frac{\sqrt{26}}{10}$

$\sin(\frac{\omega\pi}{8} + \alpha) = -\frac{\sqrt{2}}{2} \times \frac{\sqrt{26}}{10} + \frac{\sqrt{2}}{10} \times \frac{\sqrt{26}}{2} = -\frac{1}{10} + \frac{1}{10} = 0$

$= -\frac{1}{10}$ (2) (2A)

$\sin^2 \pi + \sin^2 \pi + \cos^2 \pi = 1 + \frac{1}{4} \Rightarrow \sin^2 \pi = \frac{1}{4} \Rightarrow \sin \pi = \pm \frac{\sqrt{2}}{2}$ (2) (2A)

$\cos \pi = \pm \frac{\sqrt{3}}{2}$

$\cos^2 \pi = \frac{3}{4}$

$\tan \pi = \pm \frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{3}}{2}} = \pm \frac{\sqrt{2}}{\sqrt{3}} = \pm \frac{\sqrt{6}}{3}$ (1) (2A)

$\frac{9 \sin \alpha \times \sqrt{2}}{2} = \frac{9}{2} \quad 9 \sin \alpha = \sqrt{2}$

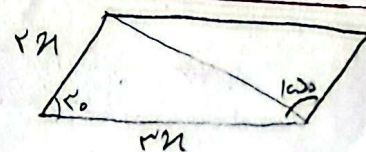
$\alpha = \begin{cases} 90 \\ 120 \end{cases}$

$\sin \alpha = \frac{\sqrt{2}}{2} \quad \frac{120}{90} = 2$ (2) (2A)

$S = \pi (\pi \cdot \frac{1}{2}) = 2\pi$

$\frac{\pi}{2} = 9 \quad \pi = 18 \quad \pi = 2\sqrt{2}$

$P = 2(9\sqrt{2} + 9\sqrt{2}) = 36\sqrt{2}$ (2) (2A)



$$\frac{S(\triangle ABC)}{S(\triangle ADE)} = \frac{\omega \times \cancel{r} \times \sin \hat{A}}{\varepsilon \times \cancel{r} \times \sin \hat{A}} = \frac{\omega}{\varepsilon}$$

(1, 5) (1)

$$S(\triangle ABC) = \omega n$$

$$S(\triangle ADE) = \varepsilon n$$

$$\omega n - \varepsilon n = 1, \forall \omega$$

$$n = 1, \forall \omega$$

$$\alpha = \frac{\pi}{4} \rightarrow \tan \alpha = \boxed{\frac{\sqrt{r}}{r}}$$

$$S(\triangle ADE) = \varepsilon \times 1, \forall \omega = V$$

$$\cancel{\varepsilon} \times \cancel{r} \times \sin \alpha = \cancel{r} \times \cancel{\varepsilon} \times V \rightarrow \sin \alpha = \frac{1}{r}$$

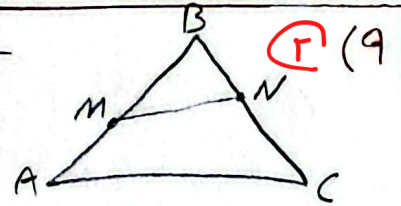
$$\omega \sin \alpha = r$$

$$\sin \alpha = \frac{r}{\omega}$$

$$\cos \alpha = \frac{\sqrt{r}}{\omega}$$

$$\tan \alpha = \frac{\frac{r}{\omega}}{\frac{\sqrt{r}}{\omega}} = \frac{r}{\sqrt{r}} = \frac{r \sqrt{r}}{r} = \boxed{\frac{r \sqrt{r}}{r}}$$

$$\frac{S(\triangle MBN)}{S(\triangle ABC)} = \frac{r \times MB \times \sin \hat{B}}{\omega \times AB \times \sin \hat{B}} = \frac{1}{r} \Rightarrow \frac{r}{\omega} \times \frac{MB}{AB} = \frac{1}{r}$$



$$\Rightarrow \frac{MB}{AB} = \frac{\omega}{r} \Rightarrow \frac{MB}{AM} = \boxed{\frac{\omega}{\varepsilon}} \checkmark$$

$$\frac{|\sin \alpha|}{\cos \alpha} = -\frac{\sin \alpha}{\cos \alpha} \Rightarrow \boxed{\sin \alpha < 0}$$

(10) (10)

$$\frac{1}{\sqrt{\cos^2 \alpha}} - \frac{\sin \alpha}{\cos \alpha} = \frac{1 + \sin \alpha}{|\cos \alpha|} \Rightarrow \frac{1}{\sqrt{\cos^2 \alpha}} = \frac{\sin \alpha}{\cos \alpha} + \frac{1}{|\cos \alpha|}$$

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

$$\boxed{\cos \alpha < 0}$$

ناقصی سوم