

VIVA

کارنامه سیمی - دهم دختر

$$\begin{aligned} \text{الف) } \tan\left(\frac{\pi}{4} + \frac{\pi}{4}\right) &= \tan\left(\frac{\pi}{2}\right) \\ \sin\left(\frac{\pi}{4} + \frac{\pi}{4}\right) &= \sin\left(\frac{\pi}{2}\right) \\ \cos\left(\frac{\pi}{4} + \frac{\pi}{4}\right) &= \cos\left(\frac{\pi}{2}\right) \end{aligned} \quad (1)$$

$$\underbrace{\tan\left(\frac{\pi}{4}\right)}_{-1} + \underbrace{\sin\left(\frac{\pi}{4}\right)}_{\left(\frac{\sqrt{2}}{2}\right)} \underbrace{\cos\left(\frac{\pi}{4}\right)}_{\left(-\frac{\sqrt{2}}{2}\right)} = \boxed{-\frac{1}{2}}$$

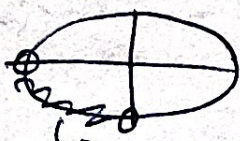
$$\begin{aligned} \text{ب) } \tan\left(\frac{12\pi}{4} + \frac{0\pi}{4}\right) &= \tan\left(\frac{0\pi}{4}\right) \\ \sin\left(\frac{12\pi}{4} + \frac{0\pi}{4}\right) &= \sin\left(\frac{0\pi}{4}\right) \\ \cos\left(\frac{12\pi}{4} + \frac{0\pi}{4}\right) &= \cos\left(\frac{0\pi}{4}\right) \end{aligned}$$

$$\underbrace{\tan\left(\frac{0\pi}{4}\right)}_{-1} \underbrace{\sin\left(\frac{0\pi}{4}\right)}_{\left(-\frac{\sqrt{2}}{2}\right)} + \underbrace{\cos\left(\frac{0\pi}{4}\right)}_{\left(-\frac{\sqrt{2}}{2}\right)} = \boxed{0}$$

$$\cot \alpha = 5 \rightarrow \frac{\cos \alpha}{\sin \alpha} = 5 \rightarrow \cos \alpha = 5 \sin \alpha \quad (2)$$

$$\frac{5 \sin \alpha - \sin \alpha}{5 \sin \alpha + \sin \alpha} = \frac{4 \sin \alpha}{6 \sin \alpha} = \boxed{\frac{2}{3}}$$

$$\sin \alpha = r \cos \alpha$$



$$\sin \alpha \text{ و } \cos \alpha < 0$$

$$\cos \alpha = \boxed{-\frac{1}{\sqrt{2}}}$$

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

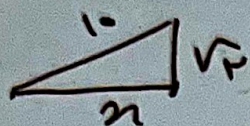
$$1 - \cos^2 \alpha + \cos^2 \alpha = 1$$

$$\cos^2 \alpha = 1 \rightarrow \cos \alpha = \pm 1 \rightarrow \cos \alpha = -\frac{1}{\sqrt{2}}$$

(4)

$$\cos(\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta \quad \text{از این نظم}$$

الف) $\cos\left(\frac{\pi}{4} + \alpha\right) = \left(\cos\left(\frac{\pi}{4}\right)\cos(\alpha) - \sin\left(\frac{\pi}{4}\right)\sin(\alpha)\right) = \boxed{\frac{\sqrt{2}}{10}}$

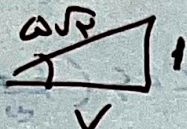


$n = \sqrt{2} \rightarrow \cos \alpha = \frac{\sqrt{2}}{10}$ در مثل قائم الزامی است

$$\sin(\alpha + \beta) = \sin \alpha \cos \beta + \sin \beta \cos \alpha \quad \text{از این نظم}$$

$\therefore \sin\left(\frac{\pi}{4} + \alpha\right) = \sin\left(\frac{\pi}{4}\right)\cos(\alpha) + \sin(\alpha)\cos\left(\frac{\pi}{4}\right) = \boxed{\frac{-4}{5}}$

$\tan \alpha = \frac{\text{مقابل}}{\text{جانب مجاور}} \Rightarrow$



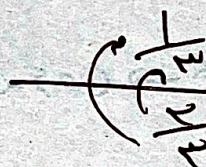
$\cos \alpha = \frac{1}{\sqrt{2}}$

$\sin \alpha = \frac{1}{\sqrt{2}}$

$$\sin^2 \alpha + \cos^2 \alpha = \frac{4}{5}$$

(5)

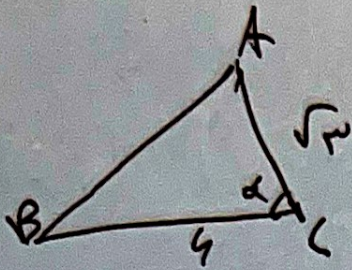
$\tan^2 \alpha = ? \rightarrow \frac{\sin^2 \alpha}{\cos^2 \alpha} = ? \rightarrow$



$\frac{1}{1} = \boxed{\frac{1}{1}}$

$\left. \begin{array}{l} \sin^2 \alpha + \cos^2 \alpha = \frac{4}{5} \\ - \sin^2 \alpha + \cos^2 \alpha = 1 \end{array} \right\} \rightarrow \sin^2 \alpha = \frac{1}{5} \rightarrow \sin \alpha = \frac{1}{\sqrt{5}}$

$\frac{4}{5} = \cos^2 \alpha$



$$\frac{1}{\sqrt{2}} \times \sqrt{2} \times \sin \alpha = \frac{4}{\sqrt{2}} \quad \text{P}$$

$$\sqrt{2} \times \sin \alpha = \frac{4}{\sqrt{2}}$$

$$\hookrightarrow \sin \alpha = \frac{\frac{4}{\sqrt{2}}}{\sqrt{2}} = \frac{4}{\sqrt{2} \times \sqrt{2}} = \frac{4}{2} = \frac{2}{1} = \frac{\sqrt{2}}{\sqrt{2}}$$

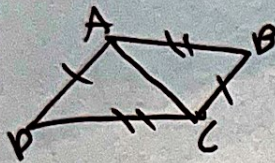
(max) 1.2 $\leftarrow \alpha$
(min) 4.

$$\frac{1.2}{4.0} = \frac{1}{\sqrt{2}} \quad \text{P}$$

$$\cancel{P(AB \times AC \times \sin \theta)}$$

(2)

$$P_{ABCD} = \omega \epsilon \rightarrow \cancel{2n \times 2n \times \sin \theta} \rightarrow \cancel{2n} \times \frac{1}{\sqrt{2}} = \omega \epsilon \quad \text{P}$$



$$\cancel{2n} = \omega \epsilon \rightarrow n^2 = 1.8$$

$$n = 4.24$$

$$n = 4\sqrt{1.8}$$

$$P_{ABCD} = (2 \times (2n)) + (2 \times (2n))$$

$$\underbrace{(2 \times (4\sqrt{2}))}_{12.8} + \underbrace{(2 \times (4\sqrt{2}))}_{12.8} = \boxed{25.6}$$

$$S_{ABC} = \frac{1}{2} \times \omega \times \sin \alpha \times \frac{1}{\sqrt{2}} = \frac{\omega}{\sqrt{2}} \sin \alpha \quad \text{P}$$

$$S_{ADE} = \frac{1}{2} \times \omega \times \frac{1}{\sqrt{2}} \times \sin \alpha = \frac{\omega}{2\sqrt{2}} \sin \alpha$$

$$\left. \begin{aligned} S_{ABC} &= \frac{\omega}{\sqrt{2}} \sin \alpha \\ S_{ADE} &= \frac{\omega}{2\sqrt{2}} \sin \alpha \end{aligned} \right\} \rightarrow \frac{\omega}{\sqrt{2}} \sin \alpha = \frac{\omega}{2\sqrt{2}} \sin \alpha = 1.2$$

$$\sin \alpha = \frac{1}{\sqrt{2}} \rightarrow \text{triangle} \quad \text{P}$$

$$\sin \alpha = \frac{\frac{\omega}{\sqrt{2}}}{\frac{\omega}{2\sqrt{2}}} = \frac{1}{\sqrt{2}} \quad \frac{1}{\sqrt{2}} \sin \alpha = 1.2$$

$$\tan \alpha = \frac{\sin \alpha}{\cos \alpha} = \frac{1.2}{1.0} = \boxed{\frac{1}{\sqrt{2}}} \quad \text{P}$$

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

$$|\sin \alpha| = -\sin \alpha \quad \sin \alpha < 0 \quad \text{P}$$

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

$$|\cos \alpha| = \cos \alpha \rightarrow \cos \alpha > 0$$

$$\frac{S_{ABC}}{S_{BMN}} = \frac{\frac{1}{2} \times AB \times \cancel{AN} \times \sin \hat{B}}{\frac{1}{2} \times BM \times \cancel{EN} \times \sin \hat{B}} = 3 \rightarrow \frac{AB}{BM} = \frac{3}{1}$$

$$\frac{BM}{BM + AM} = \frac{1}{3} \rightarrow BM = AN \rightarrow \frac{BM}{AM} = \boxed{\frac{1}{2}}$$

$$\frac{\sqrt{c^2 - a^2}}{|c \cdot \sin \alpha|} - \frac{\sin \alpha}{c \cdot \sin \alpha} = \frac{1 + \sin \alpha}{|c \cdot \sin \alpha|} \rightarrow \frac{1}{|c \cdot \sin \alpha|} - \frac{1 - \sin \alpha}{|c \cdot \sin \alpha|} = \frac{\sin \alpha}{c \cdot \sin \alpha}$$

$$\frac{-\sin \alpha}{|c \cdot \sin \alpha|} = \frac{\sin \alpha}{c \cdot \sin \alpha} \rightarrow |c \cdot \sin \alpha| = -c \cdot \sin \alpha \rightarrow \boxed{c \cdot \sin \alpha < 0}$$

$$\frac{|\sin \alpha|}{\sin \alpha} = -\tan \alpha \rightarrow |\sin \alpha| = -\sin \alpha \rightarrow \boxed{\sin \alpha < 0}$$

} ناصب سوم