

۱۷، ۷۵

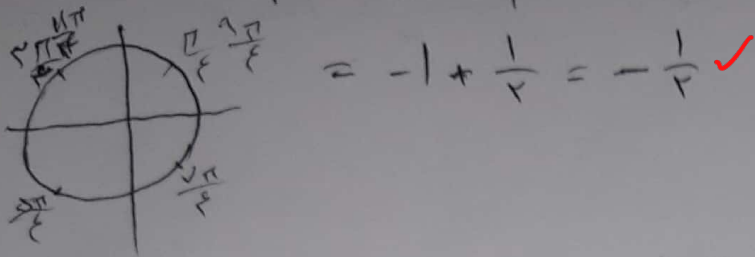
دوم

۱۸

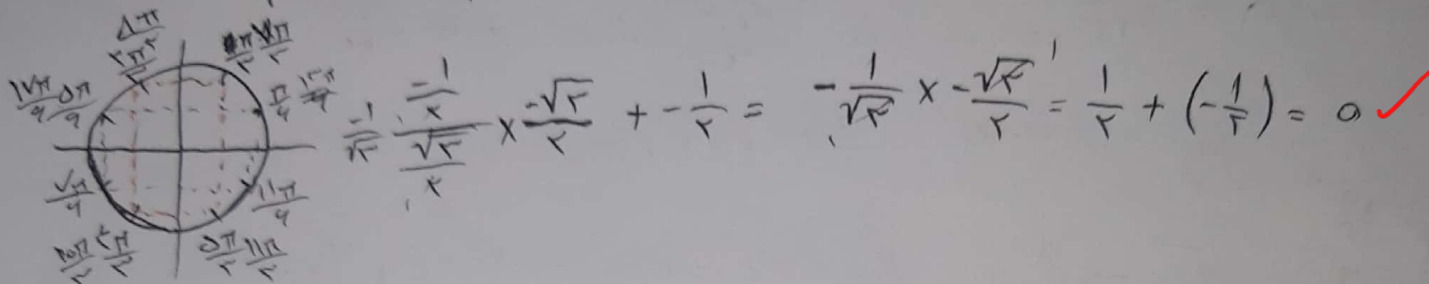
شماره تکلیف

تاریخ

سوال ۱: $\tan \frac{11\pi}{4} + \sin \frac{15\pi}{4} \times \cos \frac{13\pi}{4} = -1 + \frac{-\sqrt{2}}{2} \times \frac{-\sqrt{2}}{2}$

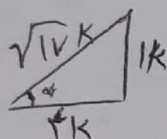


۱) $\tan \frac{17\pi}{4} \times \sin \frac{11\pi}{4} + \cos \frac{10\pi}{4}$



$\cot x = \frac{1}{\tan x}$

$\frac{2\cos x - \sin x}{\cos x + \sin x} = ?$



سوال ۲: $1K^2 + (\sqrt{14}K)^2 = 1K^2 + 14K^2 = 15K^2$
 $\sqrt{15K^2} = \sqrt{15}K$

$\rightarrow \frac{2\cos x - \sin x}{\cos x + \sin x} = \frac{2 \times \frac{1K}{\sqrt{15}K} - \frac{\sqrt{14}K}{\sqrt{15}K}}{\frac{1K}{\sqrt{15}K} + \frac{\sqrt{14}K}{\sqrt{15}K}} = \frac{\frac{2K}{\sqrt{15}} - \frac{\sqrt{14}K}{\sqrt{15}}}{\frac{K}{\sqrt{15}} + \frac{\sqrt{14}K}{\sqrt{15}}} = \frac{2 - \sqrt{14}}{1 + \sqrt{14}} = \frac{11}{5}$ ✓

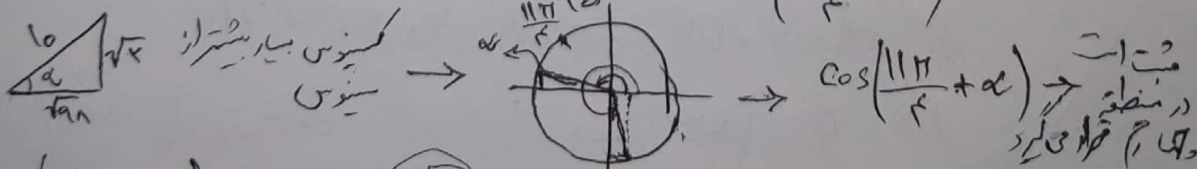
$\sin d = 2\cos d \rightarrow d \rightarrow \text{در ربع دوم} \quad \cos d = ?$

$\sin^2 d + \cos^2 d = 1 \rightarrow (2\cos d)^2 + \cos^2 d = 1$

سوال ۳: ۲

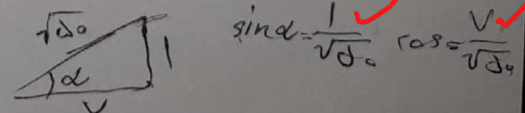
$= 4\cos^2 d + \cos^2 d = 1 \rightarrow 5\cos^2 d = 1 \rightarrow \cos^2 d = \frac{1}{5} \rightarrow \cos d = \pm \frac{\sqrt{1}}{\sqrt{5}}$
 $\xrightarrow{\text{در ربع دوم}} \cos d = -\sqrt{\frac{1}{5}}$ ✓

الف) $d \rightarrow \text{در ربع دوم} \quad \sin d = \frac{\sqrt{2}}{10}$ ✓ $\cos\left(\frac{11\pi}{4} + d\right)$



$\rightarrow \cos\left(\frac{11\pi}{4} + d\right) = -\sin d = -\frac{\sqrt{2}}{10}$

۱) $d \rightarrow \text{در ربع اول} \quad \tan d = \frac{1}{\sqrt{5}} \quad \sin\left(\frac{13\pi}{4} + d\right) = ?$



$\rightarrow d \rightarrow \sin d = \sin \frac{13\pi}{4} \times \sin d = -\frac{\sqrt{2}}{2} \times \frac{1}{\sqrt{6}} = -\frac{1}{\sqrt{3}}$

$\rightarrow d \rightarrow \sin\left(\frac{13\pi}{4} + d\right) = -\cos d = -\frac{\sqrt{5}}{\sqrt{30}}$

جواب صفحه آخر...

$$r \sin^2 R + \cos^2 R = \frac{r}{r}$$

$$\tan^2 R = ?$$

سوال 3

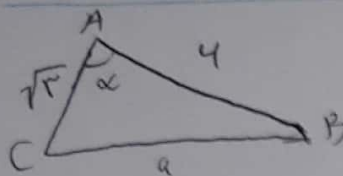
$$r \sin^2 R + \cos^2 R = \sin^2 R + \sin^2 R + \cos^2 R = \frac{r}{r} \rightarrow \sin^2 R + 1 = \frac{r}{r} \rightarrow \sin^2 R = \frac{r}{r} - 1 = \frac{r-r}{r} = \frac{0}{r} = 0$$

$$\rightarrow \sin R = \pm \sqrt{\frac{0}{r}} = 0$$

$$\frac{1}{\frac{r}{r}} = \frac{1}{r} \quad \tan^2 R = \frac{1}{r} \quad \checkmark$$

$$\frac{\sin^2 R}{\cos^2 R} = \tan^2 R$$

سوال 4



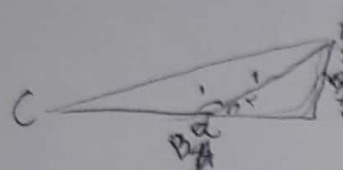
$$S_{ABC} = \frac{1}{2} \times 4 \times 5 \times \sin \alpha = \frac{1}{2} \times 4 \times 5 \times \sin \alpha$$

$$\frac{9\sqrt{5}}{2} \times \sin \alpha = \frac{1}{2} \times 4 \times 5 \times \sin \alpha$$

$$\frac{9\sqrt{5}}{4} = \sin \alpha$$

$$\sin \alpha = \frac{3\sqrt{5}}{4}$$

1, 2



$$\sin \alpha_1 = \sin \alpha$$

$$\frac{1}{2} \times 4 \times 5 \times \sin \hat{A} = \frac{1}{2} \times 4 \times 5 \times \sin \alpha \Rightarrow \sin \hat{A} = \frac{3\sqrt{5}}{4}$$

$$= \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2} \rightarrow \hat{A} = 45^\circ$$

$$\hat{A} = 45^\circ$$

$$\hat{A} + \hat{B} + \hat{C} = 180^\circ \rightarrow \hat{B} + \hat{C} + 45 = 180$$

$$\Rightarrow \hat{B} + \hat{C} = 135$$

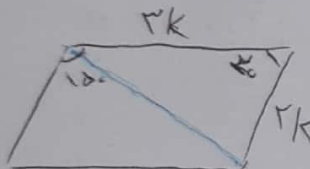
$$\frac{a}{\sin A} = \frac{c}{\sin C} = \frac{b}{\sin B} \rightarrow \frac{4}{\sin 45} = \frac{5}{\sin B} \rightarrow \sin B = \frac{5 \sin 45}{4} = \frac{5\sqrt{2}}{8}$$

$$\left. \begin{array}{l} \alpha \sin C = \frac{3\sqrt{5}}{4} \\ \alpha \sin B = \frac{5\sqrt{2}}{8} \end{array} \right\} \begin{array}{l} \alpha_{\max} = 4 \\ \alpha_{\min} = \frac{5}{4} \end{array}$$

$$\frac{A_{\max}}{A_{\min}} = \boxed{2}$$

$$\frac{4}{\frac{5}{4}} = \frac{16}{5}$$

نسبت $\frac{\alpha_{\max}}{\alpha_{\min}}$ رو میخوانیم نه!



$$\frac{1}{2} \times \sin 60^\circ \times 2k \times 2k \times \frac{1}{2} = \Delta f$$

$$\frac{1}{2} \times \sin 60^\circ \times 2k \times 2k = \Delta f \quad 2k^2 = \Delta f \quad k^2 = \frac{\Delta f}{2}$$

سوال 7

2

$$\sqrt{11} = \sqrt{2} \times \sqrt{11} = \sqrt{22}$$

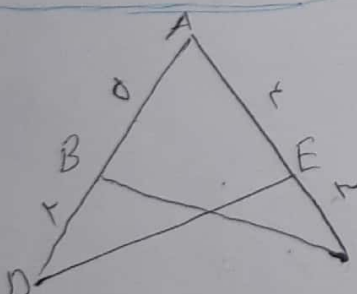
$$K = \sqrt{11}$$

$$\vec{b} = (\vec{r} - \vec{d}) \times \vec{r} = 10\vec{k} \quad 10 \times \sqrt{11} = 10\sqrt{11}$$

$$= 10\sqrt{11} \quad \checkmark$$

سوال 8

2



$$S_{ABE} - S_{ADE} = 1, \text{VD} \quad \tan \hat{A} = ?$$

$$\frac{1}{2} \times \sin \hat{A} \times 4 \times 5 = \frac{1}{2} \times \sin \hat{A} \times 4 \times 5$$

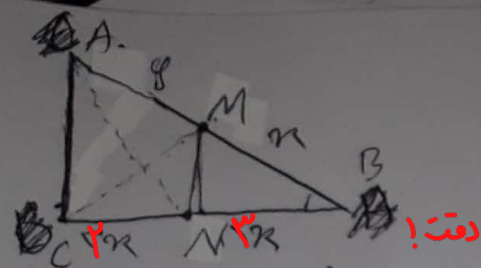
$$\frac{1}{2} \times \sin \hat{A} \times 4 \times 5 = \frac{1}{2} \times \sin \hat{A} \times 4 \times 5$$

$$\rightarrow \frac{1}{2} \times \sin \hat{A} \times 4 \times 5 = \frac{1}{2} \times \sin \hat{A} \times 4 \times 5 + 1, \text{VD} = \Delta \sin \hat{A} = 4 \sin \hat{A} + 1, \text{VD}$$

$$\sin \hat{A} = \frac{1, \text{VD}}{4} \quad S_{ABE} - S_{ADE} = 1, \text{VD} \rightarrow \frac{1}{2} \times \sin \hat{A} \times 4 \times 5 - \frac{1}{2} \times \sin \hat{A} \times 4 \times 5 = 1, \text{VD}$$

$$\frac{1}{2} \times \sin \hat{A} \times 4 \times 5 - \frac{1}{2} \times \sin \hat{A} \times 4 \times 5 = 1, \text{VD} \quad \frac{1}{2} \times \sin \hat{A} \times 4 \times 5 = \frac{1}{2} \times \sin \hat{A} \times 4 \times 5 + 1, \text{VD} \rightarrow \frac{1}{2} \times \sin \hat{A} = \frac{1}{2} \rightarrow \sin \hat{A} = \frac{1}{2}$$

$$\rightarrow \hat{A} = 30^\circ \quad \tan 30^\circ = \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3} \quad \checkmark$$



$$\overline{BN} = \overline{NC}$$

$$\frac{BM}{AM} = ?$$

سوال 9

(1/2)

$$S_{\triangle ABC} = S_{\triangle BMN}$$

$$S_{\triangle ABC} = \frac{1}{2} \times (y+x) \times \Delta r \times \sin B \quad S_{\triangle BMN} = \frac{1}{2} \times r \times \Delta r \times \sin B$$

$$\frac{1}{2} \times r \times \Delta r \times \sin B = \frac{1}{2} \times (x+y) \times \Delta r \times \sin B$$

$$\rightarrow \frac{\frac{1}{2} \times r \times \Delta r \times \sin B}{\frac{1}{2} \times (x+y) \times \Delta r \times \sin B} = \frac{r}{x+y} = 1 \rightarrow r = x+y$$

$$\rightarrow r = \Delta y \quad \frac{BM}{AM} = \frac{r}{y} = \frac{\Delta y}{y} = \frac{\Delta y}{y}$$

$\frac{\Delta y}{y}$

$$\frac{1}{\sqrt{\cos^2 \alpha}} - \tan \alpha = \frac{1 + \sin \alpha}{|\cos \alpha|}, \quad \frac{|\sin \alpha|}{\cos \alpha} = -\frac{1}{\cot \alpha}$$

(2)

سوال 10: α (سری 1, 2, 3, 4) α (سری 1, 2, 3, 4)

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

$$= \tan \alpha = -\tan \alpha$$

$$\frac{1}{\sin \alpha} = \frac{\sin \alpha}{\cos \alpha} = \tan \alpha \rightarrow \sin \alpha < 0$$

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

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

$$\rightarrow \cos \alpha < 0 \quad \alpha \rightarrow \text{سری 1, 2, 3, 4}$$

الف) $\cos^2 \alpha = 1 - \sin^2 \alpha \rightarrow \cos^2 \alpha = \frac{9}{10} \xrightarrow{\text{بجواب}} \cos \alpha = -\frac{\sqrt{10}}{10}$ (ك)

$$\cos\left(\frac{11\pi}{4} + \alpha\right) = \cos\left(3\pi + \left(-\frac{\pi}{4} + \alpha\right)\right) = -\cos\left(\alpha - \frac{\pi}{4}\right)$$

$$= -\left(\cos \alpha \cos \frac{\pi}{4} + \sin \alpha \sin \frac{\pi}{4}\right) = -\left(-\frac{\sqrt{2}}{10} \times \frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{10} \times \frac{\sqrt{2}}{2}\right) = \frac{2}{5}$$

ب) $1 + \frac{\tan^2 \alpha}{1} = \frac{1}{\cos^2 \alpha} \xrightarrow{\text{بجواب}} \cos \alpha = \frac{\sqrt{2}}{10} \xrightarrow{\sin^2 \alpha + \cos^2 \alpha = 1} \sin \alpha = \frac{\sqrt{2}}{10}$

$$\sin\left(\frac{13\pi}{4} + \alpha\right) = \sin\left(3\pi + \frac{\pi}{4} + \alpha\right) = -\sin\left(\frac{\pi}{4} + \alpha\right) \xrightarrow{\text{مشتق مشتق}} -\frac{2}{5}$$