ناصر مدرس ۲۵

۱- $+\frac{\sqrt{2}}{4}$

الف) $\tan\left(2\pi+\frac{3\pi}{4}\right)+\sin\left(2\pi+\frac{7\pi}{4}\right)\times\cos\left(2\pi+\frac{5\pi}{4}\right)=-\frac{1}{2}$

$-1 \qquad -\frac{\sqrt{2}}{2} \qquad -\frac{\sqrt{2}}{2}$

$-\frac{1}{2}$

ب) $\tan\left(2\pi+\frac{5\pi}{4}\right)\times\sin\left(2\pi+\frac{5\pi}{3}\right)+\cos\left(2\pi+\frac{4\pi}{3}\right)=$

$-\frac{1}{\sqrt{3}} \qquad -\frac{\sqrt{3}}{2} \qquad -\frac{1}{2}$

$\frac{1}{2}-\frac{1}{2}\sqrt{5}$

۲- $\frac{1}{\sin\alpha}\left(\frac{3\cos\alpha-\sin\alpha}{\cos\alpha+\sin\alpha}\right)=\frac{3\cot\alpha-1}{\cot\alpha+1}=\frac{11}{5}$

$\sin^2=4\cos^2$

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

$\cos^2=\frac{1}{5} \qquad \cos=\frac{-1}{\sqrt{5}}$

۳- $+\frac{12}{20}$

$\frac{2}{20}$

الف) $\cos\left(\frac{11\pi}{4}+\alpha\right)=\cos\frac{11\pi}{4}\times\cos\alpha-\sin\frac{11\pi}{4}\sin\alpha=\frac{\sqrt{2}}{20}-\left(\frac{\sqrt{2}}{2}\times\frac{\sqrt{2}}{10}\right)$

$-\frac{\sqrt{2}}{2} \qquad -\frac{\sqrt{2}}{10}$

$\frac{11\pi}{4}=2\pi+\frac{3\pi}{4} \qquad \sin\left(2\pi+\frac{3\pi}{4}\right)=+\frac{\sqrt{2}}{2}$

$\cos\left(2\pi+\frac{3\pi}{4}\right)=-\frac{\sqrt{2}}{2}$

$\cos\alpha=\sqrt{1-\sin^2}$

$\cos\alpha=+\sqrt{1-\frac{2}{100}} \rightarrow -\frac{\sqrt{98}}{10}=-\frac{7\sqrt{2}}{10}$

۴

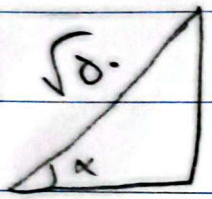
ب) $\sin\left(\frac{17\pi}{4}+a\right) = \sin\left(\frac{16\pi}{4}\right)\cos a + \sin(a)\cos\left(\frac{12\pi}{4}\right) = -\frac{\sqrt{2}}{2}\times\frac{\sqrt{7}}{\sqrt{50}} = -\frac{\sqrt{7}}{10}$ $\quad \frac{1}{\sqrt{50}}\times -\frac{\sqrt{2}}{2} = -\frac{1}{10}$

$\sin\left(\frac{12\pi}{4}\right) = \sin\left(2\pi+\frac{4\pi}{4}\right) = -\frac{\sqrt{2}}{2}$ ناصر سوم

$\cos\left(\frac{12\pi}{4}\right) = -\frac{\sqrt{2}}{2}$

$\cos a = \tan^2 a + 1 = \frac{1}{\cos^2 a}$ $\quad \frac{1}{49}+1 = \frac{1}{\cos^2 a}$ $\quad \cos = \frac{7}{\sqrt{50}}$

$\sin = \frac{49}{50} + \sin^2 = 1$ $\quad \sin^2 = \frac{1}{50}$ $\quad \sin a = \frac{1}{\sqrt{50}}$



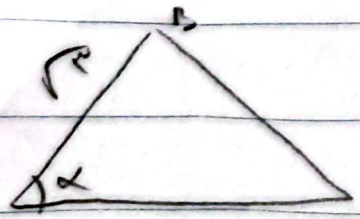
$\sin = +\frac{1}{\sqrt{50}}$ $\quad \cos = +\frac{7}{\sqrt{50}}$

$2\sin^2 x + \cos^2 x = \frac{4}{3}$ $\quad$ ۵-۹

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

$\sin^2 x = \frac{1}{3}$ $\quad \cot^2 + 1 = \frac{1}{\sin^2} = 3$ $\quad \cot^2 = 2$

$\tan^2 = \frac{1}{2}$



۶-

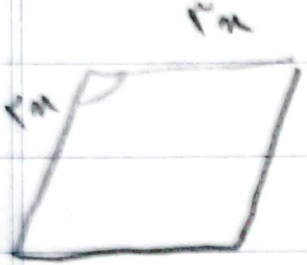
$\sqrt{3}\times 7\times\frac{1}{2}\times\sin\alpha = 4,5$ $\quad$ ۹

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

$\alpha = 12.$ $\quad \frac{120}{60} = 2$

$\searrow 60.$

- ٧



$$٣x \times ٢x \times \frac{\sin(١٥٠^\circ)}{\frac{١}{٢}} = ٥٤$$

$$٣x^٢ = ٥٤ \quad x = \sqrt{١٨}$$

$$P = ٢(٣(\sqrt{١٨}) + ٢\sqrt{١٨}) = ١٠\sqrt{١٨} \quad [٣٠\sqrt{٢}]$$

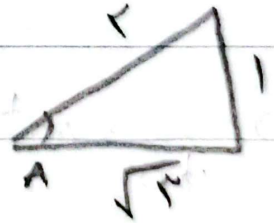
- ٨

$$S_{ABC} - S_{ADE} = \frac{V}{٤}$$

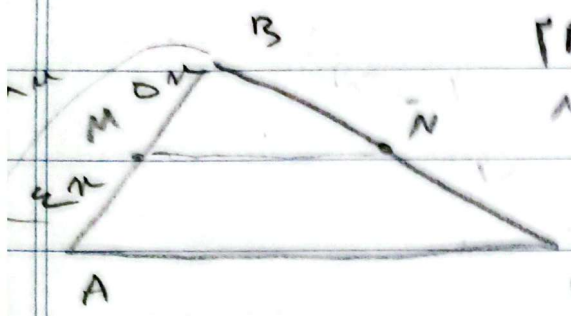
$$\frac{١}{٢} \times ٥ \times ٧ \times \sin A - ٤ \times ٧ \times \frac{١}{٢} \times \sin A$$

$$\frac{٣٥}{٢}\sin A - \frac{٢٨}{٢}\sin A = \frac{V}{٤}$$

$$\sin A \frac{V}{٢} = \frac{V}{٤} \qquad \sin A = \frac{١}{٢}$$



$$\tan A = \frac{١}{\sqrt{٣}}$$



۹. BN، NC، BC، $BN+NC$:

$NC = \frac{۲}{۳}BN$

$BC = BN + \frac{۲}{۳}BN = \frac{۵}{۳}BN$

$\frac{S_{ABC}}{S_{BMN}} = \frac{AB \times \sin B \times BC \times \frac{۱}{۲}}{MB \times \sin B \times BN \times \frac{۱}{۲}} = ۱۴$

$\frac{AB \times \frac{۵}{۳}BN}{MB \times BN} = ۱۴ \Rightarrow \frac{AB}{MB} = \frac{۹}{۵}$ (۳)

$\frac{BM}{AM} = \frac{Ox}{۴M} = \frac{۵}{۴}$

۱۰. ناصر سوم

$\frac{|\sin|}{\cos\alpha} = -\frac{\sin}{\cos}$ $\quad \sin < ۰$ (۳)

$\frac{۱}{|\cos|} - \frac{\sin}{\cos} = \frac{۱+\sin\alpha}{\cos\alpha}$ $\quad \cos < ۰$