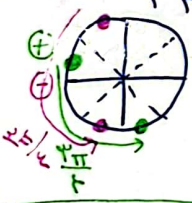


نام و نام خانوادگی: شماره ۱۱۱... کلاس: پاسخنامه تشریحی تکلیف شماره ۱۱۱... کلاس: نام و نام خانوادگی:
 نام و نام خانوادگی: شماره ۱۱۱... کلاس: پاسخنامه تشریحی تکلیف شماره ۱۱۱... کلاس: نام و نام خانوادگی:

الف) $\tan \frac{11\pi}{4} + \sin \frac{15\pi}{4} \cos \frac{13\pi}{4} = \tan \left(2\pi + \frac{3\pi}{4} \right) + \sin \left(2\pi + \frac{7\pi}{4} \right) \cos \left(2\pi + \frac{5\pi}{4} \right)$
 $= \tan \frac{3\pi}{4} + \sin \frac{7\pi}{4} \cos \frac{5\pi}{4} = -1 + \left(-\frac{\sqrt{2}}{2} \right) \left(-\frac{\sqrt{2}}{2} \right) = -1 + \frac{1}{2} = -\frac{1}{2}$
 ب) $\tan \frac{17\pi}{4} \sin \frac{11\pi}{3} + \cos \frac{10\pi}{3} = \tan \left(2\pi + \frac{5\pi}{4} \right) \sin \left(2\pi + \frac{5\pi}{3} \right) + \cos \left(2\pi + \frac{4\pi}{3} \right)$
 $= \tan \frac{5\pi}{4} \sin \frac{5\pi}{3} + \cos \frac{4\pi}{3} = -\frac{\sqrt{2}}{2} \cdot \left(-\frac{\sqrt{3}}{2} \right) + \left(-\frac{1}{2} \right) = \frac{1}{4} - \frac{1}{2} = -\frac{1}{4}$

$\frac{3\cos \pi - \sin \pi}{\cos \pi + \sin \pi} = \frac{3 \times \frac{1}{2} - \frac{1}{2}}{\frac{1}{2} + \frac{1}{2}} = \frac{11K}{5K} = \frac{11}{5}$
 $\cot \pi = \frac{1}{\tan \pi}$
 $\Rightarrow \sin \pi = 1$
 $\cos \pi = \frac{1}{K}$

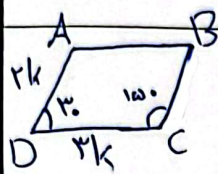
$\cos^2 \alpha + \sin^2 \alpha = 1 \xrightarrow{\sin \alpha = 2\cos \alpha} \cos^2 \alpha + 4\cos^2 \alpha = 5\cos^2 \alpha = 1$
 $\Rightarrow \cos^2 \alpha = \frac{1}{5} \xrightarrow{\text{درجہ دوم}} \cos \alpha = -\frac{1}{\sqrt{5}} = -\frac{\sqrt{5}}{5}$

الف) $\cos \left(\frac{11\pi}{4} + \alpha \right) = \cos \left(2\pi + \frac{3\pi}{4} + \alpha \right) = \cos \left(\frac{3\pi}{4} + \alpha \right) = \pm \sin \alpha$

 $\sin \alpha = \frac{\sqrt{2}}{10} < \frac{\sqrt{2}}{2}$
 $\Rightarrow \sin \alpha = \frac{\sqrt{2}}{10}$
 $\Rightarrow \cos \alpha = \frac{3\sqrt{2}}{10}$
 $\Rightarrow \sin \left(\frac{5\pi}{4} + \alpha \right) = -\cos \alpha = -\frac{3\sqrt{2}}{10}$
 $\Rightarrow \alpha \rightarrow \sin \alpha \rightarrow \frac{\sqrt{2}}{10}$
 $\Rightarrow \alpha \rightarrow \cos \alpha \rightarrow \frac{3\sqrt{2}}{10}$
 $\Rightarrow \alpha \rightarrow \tan \alpha \rightarrow \frac{1}{3}$

$2\sin^2 \pi + \cos^2 \pi = \frac{4}{5}$
 $-\sin^2 \pi + -\cos^2 \pi = -1$
 $\frac{2\sin^2 \pi + \cos^2 \pi}{-\sin^2 \pi - \cos^2 \pi} = \frac{4}{-5}$
 $\sin^2 \pi = \frac{1}{5} \Rightarrow \cos^2 \pi = \frac{4}{5}$
 $\tan^2 \pi = \frac{\sin^2 \pi}{\cos^2 \pi} = \frac{1}{4} \Rightarrow \tan \pi = \frac{1}{2}$
 $= \frac{1}{2}$

$$S_{ABC} = \frac{1}{2} \times 4 \times \sqrt{3} \times \sin \alpha = 4\sqrt{3} \Rightarrow 3\sqrt{3} \sin \alpha = 4\sqrt{3} \Rightarrow \sin \alpha = \frac{4}{3\sqrt{3}} = \frac{4}{4\sqrt{3}}$$

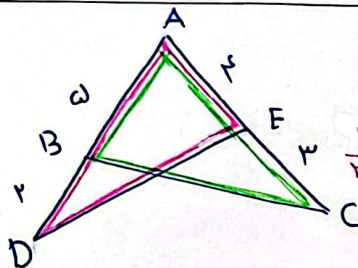
$$= \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3} \rightarrow \begin{matrix} 40^\circ \sin 40^\circ = \frac{\sqrt{3}}{3} \\ 120^\circ \sin 120^\circ = \frac{\sqrt{3}}{3} \end{matrix} \Rightarrow \frac{120}{40} = \text{المطلوب}$$



$$S_{ABCD} = \Delta f \Rightarrow S_{ABCD} = \sin 120^\circ \times AD \times AC = 3K^2 \Delta f$$

$$\Rightarrow K^2 = \frac{\Delta f}{3} = 11 \Rightarrow K = \sqrt{11}$$

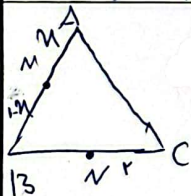
$$P_{ABCD} = AD + AB + DC + CB = 10K \xrightarrow{K=\sqrt{11}} P_{ABCD} = 10\sqrt{11} = 30\sqrt{2}$$



$$S_{ABC} - S_{ADE} = 1.4 \Rightarrow \frac{1}{2} \times \sin A \times AB \times AC - \frac{1}{2} \times \sin A \times AD \times AE = \frac{4 \times 3}{2} \sin A - 1 \sin A$$

$$= \frac{3 \times 4 - 2 \times 1}{2} \sin A = \frac{10}{2} \sin A = 5 \sin A = 1.4 \Rightarrow \sin A = \frac{1.4}{5}$$

$$1.4 \times \frac{2}{5} = \frac{1}{2} \xrightarrow{\sin A = \frac{1}{2}} A = 30^\circ \Rightarrow \tan 30^\circ = \frac{\sqrt{3}}{3}$$



$$\frac{BM}{NC} = \frac{n}{1-n} \Rightarrow \frac{BM}{BC} = \frac{n}{1} \Rightarrow BM = n \times BC \xrightarrow{BC=1} S_{ABC} = \frac{1}{2}$$

$$BMN \sim \omega = \frac{1}{2} (BM) (n) = \frac{1}{2} \times (1-n) \times \frac{n}{1} = \frac{1-n}{2}$$

$$\frac{1}{2} = 3 \times \frac{1-n}{2} \Rightarrow 1-n = \frac{1}{3} \Rightarrow n = \frac{2}{3} \Rightarrow BM = 1-n = \frac{1}{3} \Rightarrow AM = n = \frac{2}{3} \Rightarrow \frac{BM}{AM} = \frac{1}{2} \times 4 = 2$$

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

$$= -\tan \alpha \Rightarrow \sin \alpha = -$$

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