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الزاوية

$$\tan \frac{11\pi}{8} + \sin \frac{5\pi}{8} \cos \frac{13\pi}{8}$$

$$= \tan \left(2\pi + \frac{3\pi}{8} \right) + \sin \left(2\pi + \frac{5\pi}{8} \right) \cos \left(2\pi + \frac{5\pi}{8} \right)$$

$$= \frac{\tan \frac{3\pi}{8}}{-1} + \frac{\sin \frac{5\pi}{8}}{\frac{\sqrt{2}}{2}} \frac{\cos \frac{5\pi}{8}}{-\frac{\sqrt{2}}{2}} = -1 + \frac{1}{2} = -\frac{1}{2}$$

$$1 + \tan \frac{17\pi}{8} \sin \frac{11\pi}{8} + \cos \frac{10\pi}{8}$$

$$\tan \left(2\pi + \frac{9\pi}{8} \right) \sin \left(2\pi + \frac{5\pi}{8} \right) + \cos \left(2\pi + \frac{5\pi}{8} \right)$$

$$= \frac{\tan \frac{9\pi}{8}}{1} \frac{\sin \frac{5\pi}{8}}{\frac{\sqrt{2}}{2}} + \frac{\cos \frac{5\pi}{8}}{\frac{\sqrt{2}}{2}} = 1 + \left(-\frac{1}{2} \right) = \frac{1}{2}$$

$$\tan 100^\circ = \frac{1}{-1/\sqrt{2}} = -\frac{1}{1/\sqrt{2}} = -\frac{\sqrt{2}}{1} = -\sqrt{2}$$

$$\tan 300^\circ = \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}}$$

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

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$$\cot x = 8 \Rightarrow \frac{\cos x}{\sin x} = 8 \Rightarrow \cos x = 8 \sin x$$

$$\cos^2 x + \sin^2 x = 1 \Rightarrow 64 \sin^2 x + \sin^2 x = 1$$

$$\frac{12 \sin x}{\cos x - \sin x} = \frac{11 \sin x}{\cos x} = \frac{11}{5}$$

$$3) \sin x = 2 \cos x \Rightarrow \sin^2 x = 2 \cos^2 x$$

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

$$\cos^2 x = \frac{1}{3} \Rightarrow \cos x = \pm \frac{1}{\sqrt{3}}$$

چون در ربع اول ~~...~~

$$\cos x = -\frac{1}{\sqrt{3}}$$

ع 1

$$\cos\left(\frac{11\pi}{8} + \alpha\right) = -\sin \alpha = -\frac{\sqrt{2}}{2}$$

$$\sin\left(\frac{13\pi}{8} + \alpha\right) = \cos \alpha = \frac{\sqrt{2}}{2}$$

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

$$\Rightarrow \frac{2}{2} + \cos^2 \alpha = 1 \Rightarrow \cos^2 \alpha = \frac{2}{2} \Rightarrow \cos \alpha = \pm \frac{\sqrt{2}}{2} \Rightarrow \cos \alpha = \frac{\sqrt{2}}{2}$$

و 1

$$2 \sin^2 x + \cos^2 x = \frac{2}{2}$$

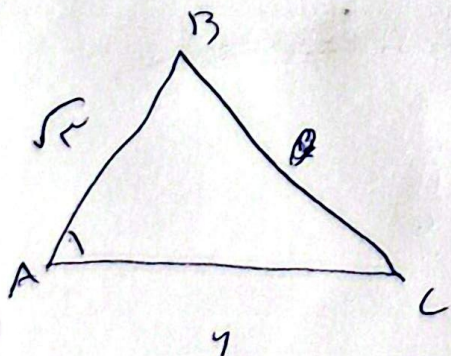
$$\sin^2 x + \cos^2 x = 1$$

$$\Rightarrow \sin^2 x = \frac{1}{2}$$

$$\Rightarrow \cos^2 x = \frac{1}{2}$$

$$\Rightarrow \tan^2 x = \frac{\sin^2 x}{\cos^2 x} = \frac{\frac{1}{2}}{\frac{1}{2}} = 1$$

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مسئله

$$S_{\Delta} = 2 \times \sqrt{2} \times \sin \hat{A} \times \frac{1}{2} = 4\sqrt{2}$$

$$= 2\sqrt{2} \times \sin \hat{A} = 4\sqrt{2}$$

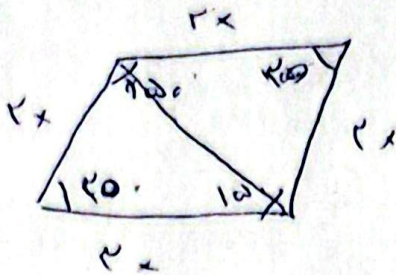
$$\Rightarrow \sin \hat{A} = \frac{4\sqrt{2}}{2\sqrt{2}} = \frac{4\sqrt{2}}{2\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{4}{2} = 2$$

$$\frac{4\sqrt{2}}{2\sqrt{2}} = 2$$

110°, 70°

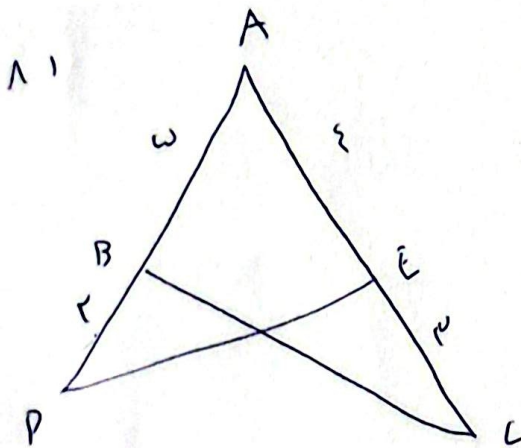
$$= \frac{4\sqrt{2}}{2\sqrt{2}} = \frac{4}{2} = 2$$

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مساحة المثلث $\Delta = (r \times r \times \sin \frac{1}{2} \times \frac{1}{r}) r = \frac{r^2 \times \sin \frac{1}{2}}{2}$
 $= r^2 \times \omega$
 $\Rightarrow r^2 = \frac{\omega}{\sin \frac{1}{2}} = 1$
 $\Rightarrow r = \sqrt{1} = 1$

مساحة $= \frac{(r \times r \times \sin \frac{1}{2})}{2} = \frac{1 \times 1 \times \sin \frac{1}{2}}{2}$



$S_{ABC} = \frac{1}{2} \times \omega \times z \times \sin \hat{A} = \frac{\omega z \sin \hat{A}}{2}$

$S_{ADE} = \frac{1}{2} \times r \times r \times \sin \hat{A} = \frac{r^2 \sin \hat{A}}{2}$

$S_{ABC} - S_{ADE} = \frac{\omega z \sin \hat{A}}{2} - \frac{r^2 \sin \hat{A}}{2}$

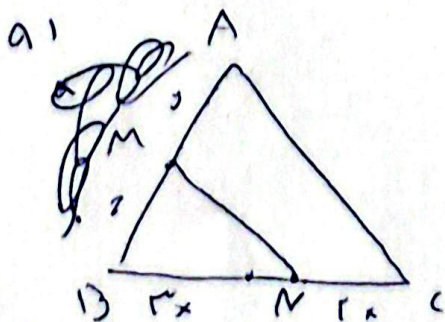
$\Rightarrow \sin \hat{A} = \frac{1}{r}$

$\cos \hat{A} = \sqrt{1 - \sin^2 \hat{A}} = \sqrt{1 - \frac{1}{r^2}}$

$\cos \hat{A} = \frac{1}{r}$

$\Rightarrow \cos \hat{A} = \sqrt{1 - \frac{1}{r^2}}$

$\Rightarrow \tan \hat{A} = \frac{\sin \hat{A}}{\cos \hat{A}} = \frac{\frac{1}{r}}{\sqrt{1 - \frac{1}{r^2}}}$



$\frac{S_{ABC}}{S_{BMN}} = \frac{\frac{y \times z \times \sin \hat{B}}{2}}{\frac{\omega \times x \times z \times \sin \hat{B}}{2}} = \frac{y \times z}{\omega \times x}$

$\Rightarrow y \times z = \omega \times x \Rightarrow BM = AN$

$\Rightarrow \frac{BM}{AN} = \frac{1}{r}$

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$$\frac{|\sin \alpha|}{\cos \alpha} = \frac{-1}{\cos \alpha} = \frac{-1}{\frac{\cos \alpha}{\sin \alpha}} = \frac{-\sin \alpha}{\cos \alpha} \Rightarrow \sin \alpha < 0$$

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

$$\Rightarrow |\cos \alpha| = -\cos \alpha$$

$$\Rightarrow \cos \alpha < 0 \Rightarrow \text{انتهای ثان در ربع دوم}$$