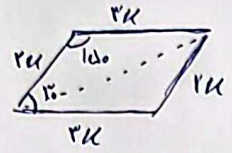
تکلیف شماره ۲۶ — معین نصری — یازدهم تجربی B

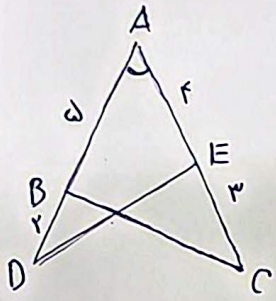


$S = 6\sqrt{3} \Rightarrow 2\left(\frac{1}{2} \times 2x \times 3x \times \sin 150^\circ\right) = 3x^2 = 6\sqrt{3}$ ①

$x^2 = 18$

$x = 3\sqrt{2}$

$P = 2(2x) + 2(3x) = 10x \longrightarrow \boxed{30\sqrt{2}}$



$S_{ABC} - S_{ADE} = 17\sqrt{3}$

$\left(\frac{1}{2} \times 5 \times 7 \times \sin\hat{A}\right) - \left(\frac{1}{2} \times 4 \times 7 \times \sin\hat{A}\right) = 17\sqrt{3}$ ②

$\frac{35\sin\hat{A}}{2} - \frac{28\sin\hat{A}}{2} = 17\sqrt{3} \xrightarrow{\times 2} 35\sin\hat{A} - 28\sin\hat{A} = 34\sqrt{3}$

$7\sin\hat{A} = 34\sqrt{3}$

$0 < \hat{A} < 90 \longleftarrow \sin\hat{A} = 0/5$

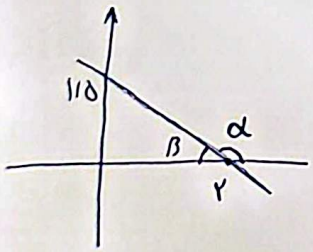
$\hat{A} = 30^\circ \Rightarrow \tan\hat{A} = \frac{\sqrt{3}}{3}$

$\frac{1}{\sqrt{\cos^2\alpha}} - \tan\alpha = \frac{1+\sin\alpha}{|\cos\alpha|} \longrightarrow \frac{1}{|\cos\alpha|} - \tan\alpha = \frac{1}{|\cos\alpha|} + \frac{\sin\alpha}{|\cos\alpha|}$ ③

$\frac{|\sin\alpha|}{\cos\alpha} = -\frac{1}{\cot\alpha} \Rightarrow \sin\alpha < 0$ ③ ④

$\cos\alpha < 0$ ② ④

$\Rightarrow \alpha$ در ناحیهٔ سوم مثلثاتی قرار دارد



$\tan\hat{\beta} = \frac{3}{4}$, $\hat{\beta} + \hat{\alpha} = 115^\circ \Rightarrow \tan\hat{\beta} = -\tan\hat{\alpha}$ ④

$\Rightarrow \tan\hat{\alpha} = -\frac{3}{4}$

$\tan\left(\frac{\pi}{2} - \alpha\right) = \cot\alpha = -\frac{4}{3}$

$$\frac{2\sin(252^\circ) + 5\sin(108^\circ)}{3\cos(648^\circ)\sin(189^\circ)} = \frac{3\sin(202^\circ) + 2\sin(292^\circ)}{\sin(202^\circ) - \cos(249^\circ) + \cos(648^\circ)\sin(90^\circ)}$$ ⑤

$= \frac{3\sin(202^\circ) + 2\sin(292^\circ)}{\sin(202^\circ) + \sin(202^\circ)} = \frac{5}{2}$

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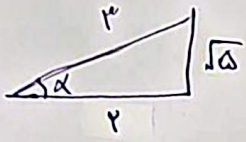

$\cos\alpha = \frac{۲}{۳}$

$\sin\alpha = -\frac{\sqrt{۵}}{۳}$

$\tan\alpha = \frac{-\sqrt{۵}}{۲}$

$\cot\alpha = -\frac{۲}{\sqrt{۵}}$

(۶)

$$\frac{\sin\left(\frac{۳\pi}{۲}+\alpha\right)+\sin(\alpha-\pi)}{|\tan\alpha^{۲}-۱|} = \frac{\cos\alpha + \sin\alpha}{\frac{۵}{۴}-\frac{۴}{۴}} = \frac{\frac{۲}{۳}+\left(-\frac{\sqrt{۵}}{۳}\right)}{\frac{۱}{۴}} = \frac{\frac{۲-\sqrt{۵}}{۳}}{\frac{۱}{۴}}$$

$$\Rightarrow \frac{۸-۴\sqrt{۵}}{۳}$$

(۷)

$\sin\alpha = ۲\cos\alpha$

α در ناحیه سوم

$\cos\alpha = ?$

$$\sin^{۲}\alpha+\cos^{۲}\alpha = ۱ \Rightarrow ۴\cos^{۲}\alpha+\cos^{۲}\alpha = ۱$$

$$\cos^{۲}\alpha = \frac{۱}{۵}$$

$$\cos\alpha = \pm\frac{\sqrt{۵}}{۵} \xrightarrow{\cos\alpha<۰} -\frac{\sqrt{۵}}{۵}$$

(۸)

$۲mx+(m^{۲}-۱)y = ۳$ $\Rightarrow -\frac{۲m}{m^{۲}-۱} = \sqrt{۳} \Rightarrow -۲m = \sqrt{۳}m^{۲}-\sqrt{۳} \Rightarrow \sqrt{۳}m^{۲}+۲m-\sqrt{۳}$

$\tan۶۰^{\circ} = \sqrt{۳}$

$$\Delta_{\text{نیما}} = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{۴-(-۱۲)}}{\sqrt{۳}} = \frac{۴}{\sqrt{۳}} = \boxed{\frac{۴\sqrt{۳}}{۳}}$$

(۹)

$$\tan\left(\frac{\pi}{۴}-x\right) = \frac{۱-m}{۲+m} \quad ; \quad -\frac{\pi}{۴} < x < \frac{\pi}{۴}$$

$x = \frac{\pi}{۴} \longrightarrow \tan۰^{\circ} = ۰$

$x = -\frac{\pi}{۴} \longrightarrow \tan\frac{\pi}{۲}^{\circ} = +\infty$

ت.ن.ن

مقداری بی‌نهایت + حرکت می‌کند

$$\Rightarrow \frac{۱-m}{۲+m} > ۰$$

	-۲		۱	
$-$	∄	$+$	۰	$-$

$m \in (-۲, ۱)$

(۱۰)

$$\tan(۳۰۰^{\circ})\cos(۲۱۰^{\circ})+\tan(۶۸۰^{\circ})\sin(۱۸۶۰^{\circ}) = (-\sqrt{۳})\left(-\frac{\sqrt{۳}}{۲}\right)+(-\sqrt{۳})\left(\frac{۱}{۲}\right)$$

$$\frac{۳}{۲}-\frac{۳}{۲} = \text{صفر} = ۰$$