Subject. تکلیف ۱۸ [illegible] [illegible]

Day. Month. Year.

الف) $\tan(2\pi + \frac{3\pi}{4}) + \sin(4\pi + \frac{\pi}{4}) \cos(3\pi + \frac{\pi}{4})$ ①

$-1 + \frac{\sqrt{2}}{2} \times -\frac{\sqrt{2}}{2} = -1 - \frac{1}{2} = -\frac{3}{2}$

ب) $\tan(2\pi + \frac{5\pi}{6}) \sin(3\pi + \frac{2\pi}{3}) + \cos(3\pi + \frac{\pi}{3})$

$-\frac{1}{\sqrt{3}} \times -\frac{\sqrt{3}}{2} - \frac{1}{2} = 0$

② $\frac{3\cos\alpha - \sin\alpha}{\cos\alpha + \sin\alpha} = \frac{3\cot - 1}{\cot + 1} = \frac{12-1}{5} = \frac{11}{5}$

③ $\sin\alpha < 0$, $\cos\alpha < 0$ $\quad \sin\alpha = 2\cos\alpha$

$\tan_\alpha = 2$

$1 + \tan^2 = \frac{1}{\cos^2}$ $\quad 1 + 4 = \frac{1}{\cos^2} \Rightarrow \cos_\alpha = -\frac{\sqrt{5}}{5}$

④ حذف

$\cos(2\pi + \frac{3\pi}{4} + \alpha) =$

$\cos\frac{3\pi}{4}\cos\alpha - \sin\frac{3\pi}{4}\sin\alpha = -\frac{\sqrt{2}}{2} \times -\frac{7\sqrt{2}}{10} - (\frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{10})$

$\frac{7}{10} - \frac{1}{10} = \frac{6}{10} = \frac{3}{5}$

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$-\sqrt{1-\sin^2} = \cos \Rightarrow -\sqrt{1-\frac{2}{100}} = -\sqrt{\frac{98}{100}} =$

$-\frac{7}{5\sqrt{2}} \cdot -\frac{\sqrt{2}\sqrt{2}}{10}$

ب) $\tan = \frac{1}{7} \Rightarrow \cot = 7$

$1 + 49 = \frac{1}{\sin^2} \Rightarrow \sin_\alpha = \frac{1}{\sqrt{50}} = \frac{\sqrt{2}}{10} \Rightarrow \cos\alpha = \frac{7\sqrt{2}}{10}$

$\sin(2\pi + \frac{2\pi}{4} + \alpha) = \sin\frac{2\pi}{4}\cos\alpha + \sin\alpha\cos\frac{2\pi}{4}$

$-\frac{\sqrt{2}}{2} \times \frac{7\sqrt{2}}{10} + \frac{\sqrt{2}}{10} \times -\frac{\sqrt{2}}{2} = -\frac{7}{10} - \frac{1}{10} = -\frac{8}{10} = -\frac{4}{5}$

ج)

$2\sin^2 + \cos^2 = \frac{5}{4}$

$\sin^2 + 1 = \frac{5}{4} \Rightarrow \sin^2 = \frac{1}{4} \Rightarrow \cos^2 = \frac{3}{4}$

$1 + \tan^2 = \frac{1}{\cos^2} \Rightarrow 1 + \tan^2 = \frac{4}{3} \Rightarrow \tan^2 = \frac{1}{3}$

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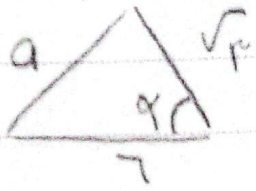
$$\frac{9}{2} = \frac{1}{2} \times 7^{2} \times \sqrt{2} \times \sin\alpha$$

$$\frac{\sqrt{2}}{2} = \sin\alpha \Rightarrow \alpha = 45^\circ$$

$$\alpha = 135^\circ$$



$$a = \sqrt{2^2 + 7^2 - 14\sqrt{2}\cos\alpha} = \sqrt{49 - 14\sqrt{2} \times \frac{1}{2}} = \sqrt{49 - 7\sqrt{2}}$$

$$a = \sqrt{2^2 + 7^2 - 14\sqrt{2}\cos\alpha} = \sqrt{49 - 14\sqrt{2} \times -\frac{1}{2}} = \sqrt{49 + 7\sqrt{2}}$$

$$a = \sqrt{\frac{49 + 7\sqrt{2}}{49 - 7\sqrt{2}}}$$

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$$\sin 30 \times ab = 4$$

$$\frac{1}{2} ab = 4$$

$$ab = 10$$

$$\frac{a}{b} = \frac{2}{3} \Rightarrow a = \frac{2}{3}b$$

$$\Rightarrow \frac{2}{3}b^2 = 10$$

$$b^2 = 15$$

$$b = 3\sqrt{2}$$

$$a = 2\sqrt{2}$$

$$P = (3\sqrt{2} + 2\sqrt{2}) \times 2 = 10\sqrt{2}$$

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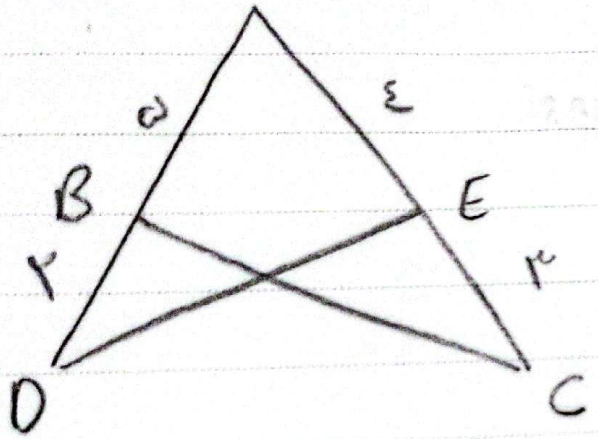

$\frac{1}{۲} \times ۷ \times ۵ \times \sin A - \frac{1}{۲} \times ۷ \times ۶ \times \sin \alpha = ۱۱\sqrt{۵}$

$\frac{1}{۲} \times ۷ \times \sin A \left(۵ - ۶\right) = ۱۱\sqrt{۵}$

$\frac{۷}{۲} \sin A = \frac{۷}{۶}$

$\sin A = \frac{۱}{۲} \Rightarrow \boxed{A = ۳۰^\circ}$

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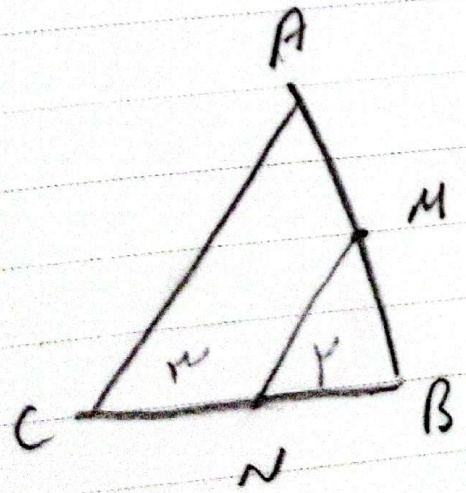

$\frac{1}{۲} \times AB \times BC \times \sin B = ۳ \times \frac{۷}{۲} BN \times BM \times \sin B$

$AB \times BC = ۳ BN \times BM$

$\frac{۲}{۶} BC$

$AB = ۲BM$

$BM + MA = ۲BM$

$MA = BM \Rightarrow \frac{BM}{MA} = ۱$

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$$\frac{1}{|\cos\alpha|} - \tan\alpha = \frac{1}{|\cos|} - \frac{\sin\alpha}{\cos\alpha}$$ (10)

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

$\cos\alpha < 0$

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

ربع چهارم