نام و نام خانوادگی: آلا وشاء ییری   پاسخ نامه تشریحی تکلیف شماره: ۱۸   کلاس: دهم تجربی

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الف) $\tan\frac{11\pi}{4} + \sin\frac{15\pi}{4}\cos\frac{13\pi}{4} \rightarrow \tan(\frac{8\pi}{4}+\frac{3\pi}{4}) + \sin(\frac{12\pi}{4}+\frac{3\pi}{4})\cos(\frac{12\pi}{4}+\frac{\pi}{4})$

$\tan\frac{3\pi}{4} + \sin\frac{7\pi}{4}\cos\frac{5\pi}{4} = -1 + \frac{1}{2} = \boxed{-\frac{1}{2}}$ جواب

($\tan\frac{3\pi}{4} = -1$ ، $\sin\frac{7\pi}{4} = -\frac{\sqrt{2}}{2}$ ، $\cos\frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$)

ب) $\tan\frac{17\pi}{6}\sin\frac{11\pi}{3} + \cos\frac{10\pi}{3} \rightarrow \tan(\frac{12\pi}{6}+\frac{5\pi}{6})\sin(\frac{9\pi}{3}+\frac{2\pi}{3}) + \cos(\frac{9\pi}{3}+\frac{\pi}{3})$

$\tan\frac{5\pi}{6}\sin\frac{5\pi}{3} + \cos\frac{4\pi}{3} = \frac{1}{2} - \frac{1}{2} = \boxed{0}$ جواب

($-\frac{\sqrt{3}}{3}$ ، $-\frac{\sqrt{3}}{2}$ ، $-\frac{1}{2}$)

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$\cot x = 4$ ، $\frac{\cos x}{\sin x} = 4$ ، $\cos x = 4\sin x$

$\frac{3\cos x - \sin x}{\cos x + \sin x} = \frac{12\sin x - \sin x}{4\sin x + \sin x} = \frac{11\sin x}{5\sin x} = \boxed{\frac{11}{5}}$ جواب

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$\sin\alpha = 2\cos\alpha$ ، $\sin, \cos < 0$ ، $\tan, \cot > 0$

$\sin^2\alpha + \cos^2\alpha = 1 \rightarrow 4\cos^2\alpha + \cos^2\alpha = 1 \rightarrow 5\cos^2\alpha = 1 \rightarrow \cos^2\alpha = \frac{1}{5} \rightarrow |\cos\alpha| = |\frac{1}{\sqrt{5}}| = -\frac{1}{\sqrt{5}} = \boxed{-\frac{\sqrt{5}}{5}}$ جواب

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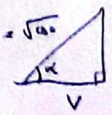
الف) $\sin > 0$ ، $\cos < 0$ ، $\sin\alpha = \frac{\sqrt{2}}{10}$ ، $\cos(\frac{11\pi}{4}+\alpha) \rightarrow \cos(\frac{8\pi}{4}+\frac{3\pi}{4}+\alpha) \rightarrow \cos(\frac{3\pi}{4}+\alpha)$

$\sin^2\alpha + \cos^2\alpha = 1 \rightarrow \frac{2}{100} + \cos^2\alpha = 1 \rightarrow \cos^2\alpha = \frac{49}{50} \rightarrow \cos\alpha = \frac{-7}{\sqrt{50}} = \frac{-7\sqrt{2}}{10}$ ، $\cos\frac{3\pi}{4} = -\frac{\sqrt{2}}{2}$ ، $\sin\frac{3\pi}{4} = \frac{\sqrt{2}}{2}$

$\cos(\alpha+\beta) = \cos\alpha\cos\beta - \sin\alpha\sin\beta \rightarrow \cos(\frac{3\pi}{4}+\alpha) = \cos\alpha\cos\frac{3\pi}{4} - \sin\alpha\sin\frac{3\pi}{4}$

$-\frac{\sqrt{2}}{2}(\cos\alpha + \sin\alpha) = -\frac{\sqrt{2}}{2}(\frac{-7\sqrt{2}}{10} + \frac{\sqrt{2}}{10}) = -\frac{\sqrt{2}}{2} \times -\frac{3\sqrt{2}}{5} = \frac{6}{10} = \boxed{\frac{3}{5}}$ جواب

ب) $\tan\alpha = \frac{1}{7}$ ، $\sin(\frac{13\pi}{4}+\alpha)$ ، $\frac{\sin\alpha}{\cos\alpha} = \frac{1}{7}$ ، $\sin\alpha = \frac{1}{5\sqrt{2}}$ ، $\cos\alpha = \frac{7}{5\sqrt{2}}$ ، $5\sqrt{2} = \sqrt{50}$



$\sin(\frac{12\pi}{4}+\frac{\pi}{4}+\alpha) = \sin(\frac{5\pi}{4}+\alpha)$ ، $\sin\frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$ ، $\cos\frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$

$\sin(\alpha+\beta) = \sin\alpha\cos\beta + \sin\beta\cos\alpha \rightarrow \sin(\frac{5\pi}{4}+\alpha) = \sin\frac{5\pi}{4}\cos\alpha + \sin\alpha\cos\frac{5\pi}{4}$

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

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$2\sin^2 x + \cos^2 x = \frac{4}{3}$ ، $\tan^2 = ?$ ، $\sin^2 x = 1 - \cos^2 x \rightarrow 2 - 2\cos^2 x + \cos^2 x = \frac{4}{3}$

$2 - \cos^2 x = \frac{4}{3} \rightarrow \cos^2 x = 2 - \frac{4}{3} \rightarrow \cos^2 x = \frac{6-4}{3} = \frac{2}{3}$ ، $\tan^2 x + 1 = \frac{1}{\frac{2}{3}}$

$\tan^2 x = \frac{3}{2} - 1 \rightarrow \tan^2 x = \boxed{\frac{1}{2}}$ جواب

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$S = \frac{1}{2}ab\sin\alpha \rightarrow 4{,}5 = \frac{1}{2} \times 6 \times \sqrt{3} \times \sin\alpha \rightarrow 4{,}5 = 3\sqrt{3} \times \sin\alpha \rightarrow \sin\alpha = \frac{\sqrt{3}}{2} \rightarrow \alpha = 60^\circ$ ، $\alpha = 120^\circ$

$\frac{\alpha_{max}}{\alpha_{min}} = \frac{120}{60} = \boxed{2}$ جواب

کلاس: دهم دختر C

پاسخنامه تشریحی تکلیف شماره: ۱۸

نام و نام خانوادگی: آرال وشاه میری

$S_{\square} = ab\sin\alpha \longrightarrow 54 = 2x \times 3x \times \frac{1}{2} \longrightarrow 54 = 6x^2 \times \frac{1}{2} \longrightarrow 54 = 3x^2 \longrightarrow x^2 = 18 \longrightarrow x = \mp\sqrt{18}$

$P = 2(\underbrace{2\sqrt{18}}_{6\sqrt{2}}) + 2(\underbrace{3\sqrt{18}}_{9\sqrt{2}}) = 12\sqrt{2} + 18\sqrt{2} = \boxed{30\sqrt{2}}$ جواب ۷

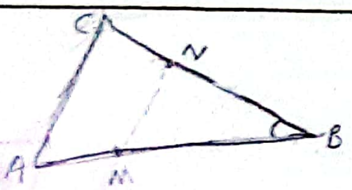
$S_{ABC} - S_{ADE} = 1.75 \longrightarrow \frac{1}{2}ab_1\sin_A - \frac{1}{2}ab_2\sin_A = 1.75$ ۸

$\frac{1}{2}\times(3+4)\times 5\times\sin_A - \frac{1}{2}\times(2+5)\times 4\times\sin_A = 1.75 \longrightarrow \sin_A\left(\frac{35}{2} - \frac{28}{2}\right) = 1.75$

$\sin_A\left(\frac{7}{2}\right) = \frac{175}{100} \longrightarrow \sin_A = \frac{\frac{175}{100}}{\frac{7}{2}} = \frac{25}{50} = \frac{1}{2}$

$\sin^2_A + \cos^2_A = 1 \longrightarrow \frac{1}{4} + \cos^2_A = 1$

$\cos^2_A = \frac{3}{4} \longrightarrow \cos_A = \frac{\sqrt{3}}{2}$ $\quad \tan_A = \frac{\sin_A}{\cos_A} \longrightarrow \tan_A = \frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{\sqrt{3}} = \boxed{\frac{\sqrt{3}}{3}}$ جواب $\quad \hat{A} = 30^\circ$



$2\overline{BN} = 3\overline{NC}$ $\quad S_{ABC} = 3S_{BMN}$ $\quad \frac{\overline{BM}}{\overline{AM}} =$

$\overline{BN} = \frac{3}{2}\overline{NC}$ $\quad \overline{BC} = \frac{3}{2}\overline{NC} + NC \longrightarrow \overline{BC} = \frac{5}{2}\overline{NC}$

$\overline{AB} = \overline{AM} + \overline{BM}$ $\quad \frac{1}{2}\times\overline{BC}\times\overline{AB}\times\sin_B = 3\left(\frac{1}{2}\times\overline{NB}\times\overline{MB}\times\sin_B\right)$ ۹

$\frac{5}{2}\overline{NC}\times AB = 3\times\frac{3}{2}\overline{NC}\times MB \longrightarrow 5\overline{AB} = 9\overline{MB} \longrightarrow \overline{AB} = \frac{9}{5}\overline{MB}$ $\quad \overline{AM} + \overline{BM} = \frac{9}{5}\overline{MB}$

$\overline{AM} = \frac{4}{5}\overline{MB}$ $\quad \frac{\overline{BM}}{\overline{AM}} = \frac{\overline{BM}}{\frac{4}{5}\overline{MB}} = \boxed{\frac{5}{4}}$ جواب

$\frac{1}{\sqrt{\cos^2_\alpha}} - \tan\alpha = \frac{1+\sin_\alpha}{|\cos_\alpha|}$ ، $\frac{|\sin_\alpha|}{\cos\alpha} = \frac{-1}{\frac{\cot_\alpha}{\frac{\cos_\alpha}{\sin_\alpha}}} \longrightarrow \frac{|\sin_\alpha|}{\cos\alpha} = \frac{-\sin_\alpha}{\cos_\alpha} \longrightarrow \sin\alpha < 0$

$\frac{1}{\sqrt{\cos^2_\alpha}} - \frac{\sin_\alpha}{\cos_\alpha} = \frac{1+\sin\alpha}{|\cos_\alpha|} \longrightarrow \frac{1}{|\cos_\alpha|} - \frac{\sin_\alpha}{\cos_\alpha} = \frac{1+\sin\alpha}{|\cos_\alpha|} \longrightarrow \frac{-\sin_\alpha}{\cos\alpha} = \frac{\cancel{1}+\sin\alpha-\cancel{1}}{|\cos_\alpha|}$ ۱۰

$\frac{-\sin\alpha}{\cos\alpha} = \frac{\sin\alpha}{|\cos_\alpha|} \longrightarrow \cos_\alpha < 0 \quad \sin_\alpha < 0$ $\boxed{\text{ناحیه ۳}}$ جواب