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نام و نام خانوادگی .امیر محمد...	پاسخنامه تشریحی تکلیف شماره ...۱۸... کلاس ...دهم B...	
الف) $\tan\frac{11\pi}{4} + \sin\frac{15\pi}{4}\cos\frac{13\pi}{4} = -1 + \left(-\frac{\sqrt{2}}{2} \times -\frac{\sqrt{2}}{2}\right) = \boxed{-\frac{1}{2}}$ ✓ ب) $\tan\frac{17\pi}{6}\sin\frac{11\pi}{3} + \cos\frac{10\pi}{3} = \left(-\frac{\sqrt{3}}{3} \times -\frac{\sqrt{3}}{2}\right) - \frac{1}{2} = \boxed{0}$ ✓ ۲		۱
$\frac{\cos x}{\sin x} = 4 \to \cos x = 4\sin x$ $\frac{3\cos x - \sin x}{\cos x + \sin x} = \frac{12\sin x - \sin x}{4\sin x + \sin x} = \boxed{\frac{11}{5}}$ ✓ ۲		۲
$\sin x = 2\cos x$ $(2\cos)^2 + \cos^2 x = 1 \to 5\cos^2 x = 1 \to \cos^2 x = \frac{1}{5} \to \cos x = -\frac{\sqrt{5}}{5}$ ربع سوم است ✓ ۲		۳
الف) $\cos\left(\frac{11\pi}{4}+\alpha\right) = \cos\left(\frac{3\pi}{4}+\alpha\right) = \cos\frac{3\pi}{4}\cos\alpha - \sin\frac{3\pi}{4}\alpha = -\frac{\sqrt{2}}{2}\cos\alpha - \frac{\sqrt{2}}{2}\sin\alpha$ $= -\frac{\sqrt{2}}{2}(\cos x + \sin x) = -\frac{\sqrt{2}}{2}\left(-\frac{7\sqrt{2}}{10} + \frac{\sqrt{2}}{10}\right) = \frac{12}{20} = \boxed{\frac{3}{5}}$ ✓ ب) $\tan\alpha = \frac{1}{7} \to 7\sin x = \cos x \to \sin\left(\frac{13\pi}{4}+\alpha\right) = \sin\left(\frac{5\pi}{4}+\alpha\right) = \sin\frac{5\pi}{4}\cos\alpha + \sin\alpha\cos\frac{5\pi}{4}$ $= -\frac{\sqrt{2}}{2}\cos\alpha + -\frac{\sqrt{2}}{2}\sin\alpha = -\frac{\sqrt{2}}{2} \times \frac{8\sqrt{2}}{10} = \boxed{-\frac{4}{5}}$ ✓ ۲		۴
$2\sin^2 x + \cos^2 x = \frac{4}{3} \to 1 + \sin^2 x = \frac{4}{3} \to \sin^2 x = \frac{1}{3} \to \cos^2 x = \frac{2}{3}$ $\tan^2 x = \frac{\sin^2 x}{\cos^2 x} = \frac{\frac{1}{3}}{\frac{2}{3}} = \boxed{\frac{1}{2}}$ ✓ ۲		۵

$S_{\hat{ABC}} = \frac{1}{2} \times \sqrt{3} \times 6 \times \sin\alpha = \frac{9}{2}$ (۴/۵) $\Rightarrow \sin\alpha = \frac{9}{6\sqrt{3}} = \frac{9\sqrt{3}}{2 \times 6 \times 3} = \frac{\sqrt{3}}{2}$ $\sin\alpha = \frac{\sqrt{3}}{2} \Rightarrow \alpha \begin{cases} \alpha_{min} = \frac{\pi}{3} \\ \alpha_{max} = \frac{2\pi}{3} \end{cases} \Rightarrow \frac{\alpha_{max}}{\alpha_{min}} = 2$ ۲	۶
$a = 2m,\ b = 3m \quad S = \frac{ab}{2}\sin\alpha \Rightarrow 54 = 3m^2 \rightarrow m^2 = 18 \rightarrow m = \sqrt{18} = 3\sqrt{2}$ $a = 6\sqrt{2},\ b = 9\sqrt{2} \Rightarrow P = 2(a+b) = 12\sqrt{2} + 18\sqrt{2} = 30\sqrt{2}$ ۲	۷
$S_{\hat{ABC}} - S_{\hat{ADE}} = 11/75$ $\frac{4 \times 7}{2} \times \sin A = 17/5 \sin A$ $\frac{5 \times 7}{2} \times \sin A = 14 \sin A$ $\Rightarrow 3/5 \sin A = 1/75 \rightarrow \sin A = \frac{1}{2} \rightarrow A = 30^\circ$ $\tan A = \tan 30 = \frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$ ۲	۸
$2BN = 3NC \rightarrow \frac{BN \rightarrow 3k}{NC \rightarrow 2k} = \frac{3}{2} \qquad S_{ABC} = 3S_{BMN}$ $\frac{S_{ABC}}{S_{BMN}} = \frac{AB \times BC \times \sin B}{BM \times BN \times \sin B} = 3 \rightarrow \frac{AB \times 5k}{BM \times 3k} = 3 \rightarrow \frac{5AB}{3BM} = 3$ $\frac{BM}{AB} = \frac{5k}{9k} = \frac{5}{9} \rightarrow \frac{BM}{AM} = \frac{5}{4}$ ۲	۹
$\frac{1}{\sqrt{\cos^2 x}} - \tan x = \frac{1+\sin x}{\lvert\cos x\rvert} \rightarrow \frac{-\sin x}{\cos x} = \frac{\sin x}{\lvert\cos x\rvert}$ (I) $\cos > 0$, (II) $\cos < 0$ I: $\frac{-\sin x}{\cos x} = \frac{\sin x}{\cos x} \rightarrow \sin x = 0 \rightarrow x = 2\pi$ ربع دوم: جواب II: $\frac{-\sin x}{\cos x} = \frac{\sin x}{-\cos x} \rightarrow -\tan = -\tan x \rightarrow x = (\frac{\pi}{2}, \frac{3\pi}{2}) \rightarrow$ ربع ۲ یا ۳ ۲	۱۰

$\frac{\lvert\sin x\rvert}{\cos x} = \frac{-1}{\cot} \rightarrow \frac{\lvert\sin x\rvert}{\cos x} = \frac{-\sin x}{\cos x} \rightarrow \lvert\sin x\rvert = -\sin x \rightarrow \sin x < 0 \rightarrow$ ربع ۳ یا ۴