نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۲۷ ..... کلاس .....

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$\frac{1}{2} \sin a \times \sqrt{2} \times 4 = \frac{9}{2}$ $\quad \sin a = \frac{\sqrt{2}}{2} \Rightarrow a = 120, 60$

$\frac{120}{60} = 2$ ✓

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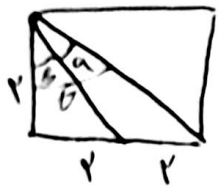

$a = \theta - \beta$, $\quad \tan\theta = 2$ $\quad \tan\beta = 1$

$\tan(\theta-\beta) = \frac{2-1}{1+2} = \frac{1}{3} = \tan a$ $\quad \cot a = 3$ ✓

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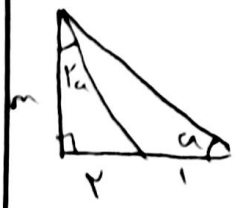

$\tan a = \frac{n}{2}$ $\quad \tan 2a = \frac{2}{n} = \frac{2 \times \frac{n}{2}}{1 - \frac{n^2}{4}} = \frac{n}{\frac{4-n^2}{4}} = \frac{4n}{4-n^2}$

$\frac{2}{n} = \frac{4n}{4-n^2} \Rightarrow n = 1.6 \Rightarrow \tan a = \frac{2}{2 \times 2} = \frac{1}{2}$

$\Rightarrow \cot a = 2$ ✓

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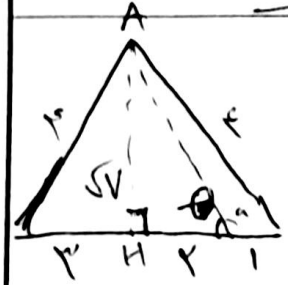

$\tan a = -\tan\theta \Rightarrow AH = \sqrt{16-9} = \sqrt{7}$

$\tan\theta = \frac{\sqrt{7}}{2} \Rightarrow \tan a = -\frac{\sqrt{7}}{2}$ ✓

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$1 + \cot^2 m = \frac{4}{3} \Rightarrow \sin^2 m = \frac{1}{4} \Rightarrow 1 - \cos^2 m = \frac{1}{4}$ $\quad \cos^2 m = \frac{3}{4}$

$\tan^2 m = \frac{\frac{1}{4}}{\frac{3}{4}} = \frac{1}{3}$ ✓

$\frac{(1-\cos^2 a)^2+4\cos^2 a}{1+\cos^2 a} - \frac{(1-\sin^2 a)^2+4\sin^2 a}{1+\sin^2 a} = \frac{(1+\cos^2 a)^2}{1+\cos^2 a} - \frac{(1+\sin^2 a)^2}{1+\sin^2 a}$ $= 1+\cos^2 a - 1 - \sin^2 a = \cos 2a$ ✓	۲	۶
$\cos a \times (-\sin a) + \cos 2a = \frac{-3}{5} \times \frac{+4}{5} + \frac{3}{4} = -\frac{12}{25} + \frac{3}{4}$ $\cos a = -\frac{3}{5}$ $\quad = \frac{-48+75}{100} = \frac{27}{100}$ ✓ $\sin a = -\frac{4}{5}$	۲	۷
$3\cos 4\pi + 2\sin(\pi - \frac{\pi}{4}) = 3\cos\frac{\pi}{3} - 2\sin\frac{\pi}{6} = 3\times\frac{1}{2} - 2\times\frac{1}{2}$ $= \frac{1}{2}$ ✓	۲	۸
$\tan a = \frac{\frac{1}{4}\times 2}{1-\frac{1}{16}} = \frac{\frac{1}{2}}{\frac{15}{16}} = \frac{8}{15}$ $\quad \sin a = \frac{8}{17}$ $\quad \cos a = \frac{15}{17}$ $\frac{\frac{8}{15} - \frac{8}{17}}{\frac{8}{17} - \frac{15}{17}} = \frac{-16}{105}$ ✓	۲	۹
$0 < \frac{\cos a}{\sin^2 a} \Rightarrow \cos a > 0$ ① $\quad 2\sin a < 2\sin a\cos a$ $\Rightarrow \sin a(1-\cos a) < 0$ (+) $\quad \sin a < 0$ ② $\quad$ ①,② ⇒ ربع چهارم ✓	۲	۱۰