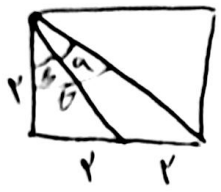
نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۲۷ ..... کلاس .....

۱

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

$\frac{120}{60} = 2$ بر ۱

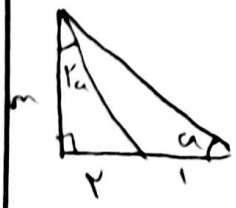
۲



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

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

۳

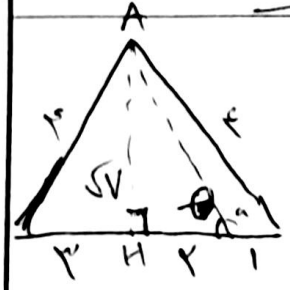


$\tan a = \frac{n}{2}$ $\quad \tan 2a = \frac{2}{m} = \frac{2 \times \frac{n}{2}}{1 - \frac{n^2}{9}} = \frac{\frac{2n}{2}}{\frac{9-n^2}{9}} = \frac{4n}{9-n^2}$

$\frac{2}{m} = \frac{4n}{9-n^2} \Rightarrow n = 1.5 \Rightarrow \tan a = \frac{3}{2 \times 2} = \frac{1}{4}$

$\Rightarrow \cot a = 4$

۴



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

$\tan\theta = \frac{\sqrt{7}}{3} \Rightarrow \tan a = -\frac{\sqrt{7}}{3}$

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

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

$$\frac{(1-\cos\theta)^2+2\cos^2\theta}{1+\cos\theta} - \frac{(1-\sin\theta)^2+2\sin^2\theta}{1+\sin\theta} = \frac{(1+\cos\theta)^2}{1+\cos\theta} - \frac{(1+\sin\theta)^2}{1+\sin\theta}$$

$$= 1+\cos\theta - 1 - \sin\theta = \cos\theta - \sin\theta$$ ۶

$$\cos\alpha \times (-\sin\alpha) + \cos 2\alpha = \frac{-3}{5} \times \frac{4}{5} + \frac{3}{4} = -\frac{12}{25} + \frac{3}{4}$$

$$\cos\alpha = -\frac{3}{5} \qquad = \frac{-48+75}{100} = \frac{27}{100}$$

$$\sin\alpha = -\frac{4}{5}$$ ۷

$$2\cos 4\pi + 2\sin\left(\pi - \frac{\pi}{6}\right) = 2\cos\frac{\pi}{3} + 2\sin\frac{\pi}{6} = 2\times\frac{1}{2} + 2\times\frac{1}{2}$$

$$= \frac{1}{2}$$ ۸

$$\tan\alpha = \frac{\frac{1}{4}\times 2}{1-\frac{1}{16}} = \frac{\frac{1}{2}}{\frac{15}{16}} = \frac{8}{15} \qquad \sin\alpha = \frac{8}{17} \quad \cos\alpha = \frac{15}{17}$$

$$\frac{\frac{8}{15} - \frac{8}{17}}{\frac{8}{17} - \frac{15}{17}} = \frac{-16}{105}$$ ۹

$$0 < \frac{\sin\alpha}{\sin^2\alpha} \Rightarrow \cos\alpha > 0 \quad (1) \qquad 2\sin\alpha < 2\sin\alpha\cos\alpha$$

$$\Rightarrow \sin\alpha(\underbrace{1-\cos\alpha}_{+}) < 0 \qquad \sin\alpha < 0 \quad (2) \qquad (1),(2) \Rightarrow \text{ربع سوم}$$ ۱۰