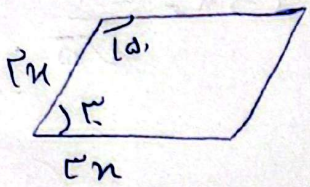
سید مسعود میرعلی اکبری

۲۰



$S = ab\sin\alpha$ (۱)

$\Rightarrow 6 = 4\times 3\sin\alpha \Rightarrow \sin\alpha = \frac{1}{2} \Rightarrow h = 2\sqrt{3}$ (۲)

$P = 4\times 3 = 12$ ✓

$\frac{1}{2}\alpha\beta\sin\alpha - \frac{1}{2}\alpha\times 4\times 2\sin\alpha = 1.75$ (۴) (۵)

$3.5\sin\alpha = 1.75 \Rightarrow \sin\alpha = \frac{1}{2} \Rightarrow \tan\alpha = \frac{\sqrt{3}}{3}$ ✓

$\frac{1}{|\cos\alpha|} - \frac{\sin\alpha}{\cos\alpha} = \frac{1-\sin\alpha}{\cos\alpha} = \frac{1}{|\cos\alpha|} - \frac{\sin\alpha}{|\cos\alpha|}$ (۳) (۴)

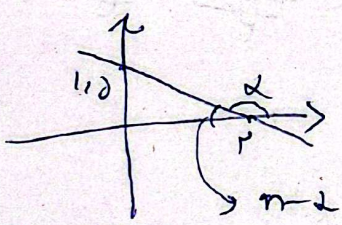
$\frac{\sin\alpha}{|\cos\alpha|} = \frac{\sin\alpha}{-\cos\alpha} \Rightarrow \cos\alpha < 0$

$\frac{|\sin\alpha|}{\cos\alpha} = -\tan\alpha = \frac{-\sin\alpha}{\cos\alpha} \Rightarrow \sin\alpha < 0$ $\Big\}\Rightarrow$ ناممکن ✓

(۶)

$\tan(\frac{\pi}{2}-\alpha) = \cot\alpha$ (۴)

$\Rightarrow \cot\alpha = -\frac{4}{3}$ ✓



$\cot(\pi-\alpha) = \frac{4}{3}$

$-\cot(\alpha) = \frac{4}{3}$

(۵)

$$\frac{3\cos(\frac{3\pi}{2}-22) - 2\sin(\pi-55)}{\sin(\pi+55)\cdot -\cos(\frac{3\pi}{2}+22)}$$ (۴)

$$= \frac{-3\sin 22 - 2\sin 55}{-\sin 22 - \sin 55} = \frac{5}{2}$$ ✓

(۶)

$$\frac{\cos\alpha\sin\alpha}{|\tan^2\alpha - 1|} = \frac{\frac{2}{3}\cdot\frac{\sqrt{5}}{3}}{|\frac{5}{4}-1|} = \frac{4\sqrt{5}-1}{3}$$ (۳) ✓

$\cos\alpha = \frac{2}{3} \Rightarrow \sin^2\alpha = 1-\cos^2\alpha \Rightarrow \sin\alpha = \frac{\sqrt{5}}{3}$ چون ۹۰ < α

$\sin^2\alpha + \cos^2\alpha = 1$ $\quad \cos^2\alpha = 1$ $\Rightarrow \cos\alpha = -\frac{1}{\sqrt{5}}$ ✓ (۲) (۷)

$\sin\alpha = \frac{-2}{\sqrt{5}}$

(۱)

$y = \frac{-2m}{m^2-1}x + \frac{2}{m^2-1}$ $\quad \frac{-2m}{m^2-1} = \sqrt{2}$ (۲)

$\sqrt{2}m^2 + 2m - \sqrt{2} = 0$ $\quad \Delta = \sqrt{s^2 - 4p} = \sqrt{\frac{4}{2} + 1} = \frac{4}{\sqrt{2}}$

$= \frac{4\sqrt{2}}{2}$ ✓

(۹)

$-\frac{\pi}{2} < x - \frac{\pi}{4} < 0 \xrightarrow{\times(-1)} 0 < \frac{\pi}{4} - x < \frac{\pi}{2}$ $\quad \tan\alpha$ (۲)

$0 < \frac{1-m}{2+m}$ $\quad$ -2 $\quad 1$ $\quad -1$ $\quad +$ $\quad -$ $\quad -2$ $\Rightarrow m \in (-2, 1)$ ✓

(۱۰)

$-\sqrt{2}\alpha - \frac{\sqrt{2}}{2} + -\sqrt{2}\alpha\frac{\sqrt{2}}{2} = 0$ ✓ (۲)