(بنام خدا)

ستایش خدایاری

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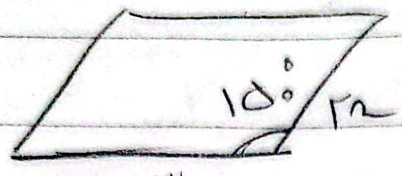
مساحت متوازی الاضلاع = ۵۴

(۱)



$S = ۵۴$

$\sin 150° \times 6x^2 = ۵۴$ (۹)

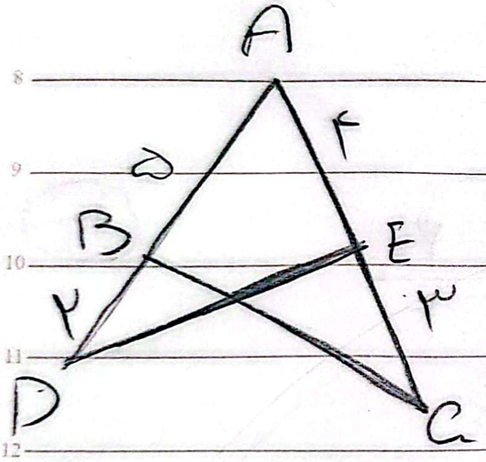
$x = \sqrt{۱۸}$

$\frac{1}{2} x^2 = ۹$

$۱۰\sqrt{۱۸} = P$

۴√

(۲)



$\Delta S = \frac{۷}{۴}$

$۱۴ \sin A - \frac{۳۵ \sin A}{۲} = \frac{۷}{۴}$

$\left| \frac{1}{2} \sin A \times ۷ \times ۴ - \frac{1}{2} \sin A \times ۷ \times ۵ \right| = \frac{۷}{۴}$

$\frac{۷}{۲} \sin A = \frac{۷}{۴}$ $\sin A = \frac{1}{۲} \rightarrow A = ۳۰°$

$\tan \hat{A} = \frac{\sqrt{۳}}{۳}$

(۳)

$$\frac{1}{\sqrt{\cos^2\alpha}} - \tan\alpha = \frac{1+\sin}{|\cos|}$$

$\cos < 0$

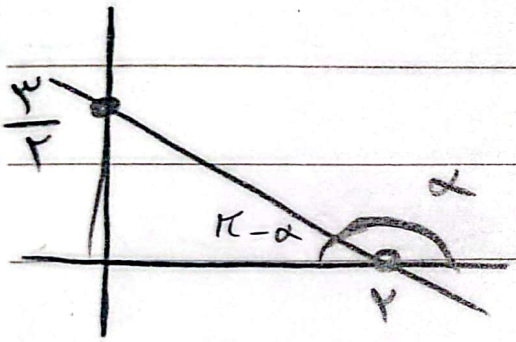
$$\frac{1}{|\cos|} - \frac{\sin}{\cos} = \frac{1+\sin}{|\cos|} \qquad \frac{\sin}{|\cos|} = \frac{-\sin}{\cos}$$

$$\frac{|\sin\alpha|}{\cos\alpha} = \frac{-\sin}{\cos}$$

$\sin < 0$

ناحیه سوم

(۴)



$$\tan(\pi-\alpha) = \frac{۳}{۴}$$

$$+\tan\alpha = -\frac{۳}{۴}$$

$$\tan\left(\frac{\pi}{۲}-\alpha\right) = +\cot\alpha = \frac{-۴}{۳}$$

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$\alpha = 22^\circ$

(a)

$$\frac{3\cos(248) - 2\sin(152)}{\sin(252) - \cos(192)}$$

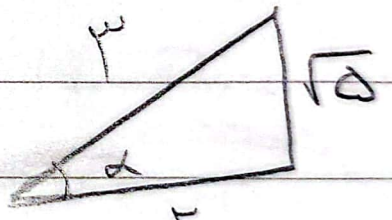
$$\frac{3\cos\left(\frac{3\pi}{2} - \alpha\right) - 2\sin(\pi - \alpha)}{\sin(\pi + \alpha) - \cos\left(\frac{3\pi}{2} + \alpha\right)}$$

$$\frac{+3\sin\alpha + 2\sin\alpha}{+\sin\alpha + \sin\alpha} = 2.5$$

(b)

$$\frac{\sin\left(\frac{\pi}{2} + \alpha\right) - \sin(\alpha - \alpha)}{|\tan^2\alpha - 1|}$$

$-\sin(\alpha - \alpha)$



$\cos\alpha$

$$\frac{\cos\alpha + \sin\alpha}{|\tan^2\alpha - 1|} = \frac{\frac{2}{3} - \frac{\sqrt{5}}{3}}{\left|\frac{5}{4} - 1\right|} = \frac{4(2 - \sqrt{5})}{3}$$

$\frac{1}{4}$

(۷)

$\sin\alpha = 2\cos\alpha \longrightarrow \tan\alpha = 2$

tan, cot ≠ ۰

$1 + \tan^2\alpha = \frac{1}{\cos^2\alpha}$

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

$\cos\alpha = -\frac{1}{\sqrt{5}}$

(۸)

$2mx + (m^2-1)y = 3$

شیب $= \sqrt{3}$

$2mx + (m^2-1)y = 3$

$\frac{-2m}{m^2-1} = \sqrt{3}$

$\sqrt{3}m^2 - \sqrt{3} + 2m = 0$

$\sqrt{3}m^2 + 2m - \sqrt{3} = 0$

$m^2 + 2m - 3 = 0$ را -3 $\xrightarrow{ac}$ $\frac{1}{\sqrt{3}}, -\frac{3}{\sqrt{3}}$

جواب $\frac{4}{\sqrt{3}}$

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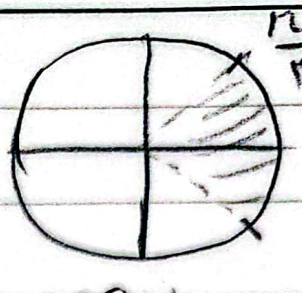
$$\tan\left(\frac{\pi}{4}-x\right)=\frac{1-m}{2+m}$$

(9)



$$\frac{\pi}{4} > -x > \frac{-\pi}{4}$$

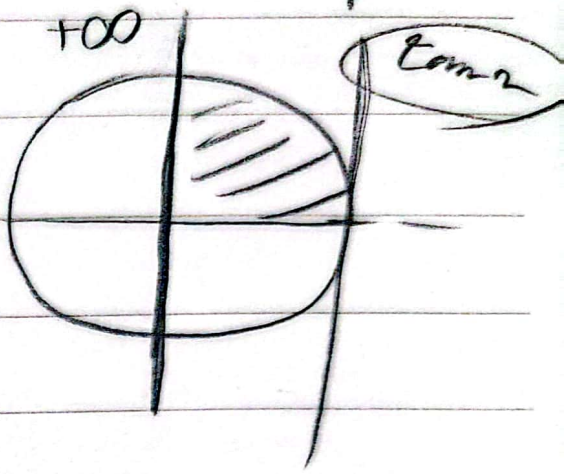
$$x \in (-2, 1]$$

$$\frac{\pi}{2} > \frac{\pi}{4} - x > 0$$

$$\frac{1-m}{2+m} > 0$$

(1) (2)

	-2		1	
	-	0	+	-



(10)

$$\tan(300^\circ)\cos(210^\circ)+\tan(840^\circ)\sin(840^\circ)$$

$$-\sqrt{3}\times\frac{-\sqrt{3}}{2}+\left(-\sqrt{3}\right)\times+\frac{\sqrt{3}}{2}=0$$

-360° → 120° → 720° → 120°