

۲۰

آزمایش کبیری کرده و هم بنویسید



$$4 + (4 \times 30) + 27 = 153$$

$$54 \div 2 = 27$$

(الف)

10

$$\alpha = |\omega_1 \omega_m - r_0 h| = |\omega_1 \omega \omega_f - 90| = 2.7$$

(ب)

$$\rightarrow 360 - 2.7 = 153$$



$$12 + 90 + 9 = 111$$

(الف) ۵

15

$$\alpha = |\omega_1 \omega_m - r_0 h| = |\omega_1 \omega \times 11 - 110| = 11$$

(ب)

$$S = \frac{\alpha}{4} R^2 = \frac{\pi}{12} \times 9 = \left(\frac{3\pi}{4}\right)$$

(الف) ۵

$$P = 3 + 3 + \frac{\pi}{9} \times 3 = \left(4 + \frac{\pi}{3}\right)$$

(ب)

20

$$S = \frac{1}{2} AB \times AC \times \sin \hat{A} = \frac{1}{2} \times 1 \times \sqrt{3} \times \frac{\sqrt{3}}{2} = 1.5$$

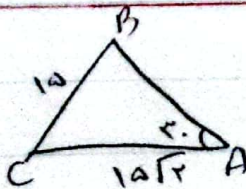
(الف) ۵

$$BC^2 = AB^2 + AC^2 - 2AB \times AC \times \cos \hat{A}$$

(ب)

$$BC^2 = 25 + 9 - 10 \times \frac{1}{2} \rightarrow BC^2 = 8 \rightarrow BC = \sqrt{8} \rightarrow P = 5 + \sqrt{8} + 5 = 10 + \sqrt{8}$$

25



$$B + C = 180^\circ \rightarrow A = 45^\circ$$

(الف) ۵

$$\frac{BC}{\sin A} = \frac{AB}{\sin B} \rightarrow \frac{10}{\frac{1}{\sqrt{2}}} = \frac{10\sqrt{2}}{\sin B} \rightarrow \sin B = \frac{1}{2} \rightarrow B = 30^\circ$$

$$\sin B = \frac{1}{2} \rightarrow B = 30^\circ \rightarrow C = 105^\circ$$

$$B = \frac{\pi}{6}, C = \frac{7\pi}{12}$$

30

subject

Year Month Date

()

$$\frac{-\tan \alpha + r \tan \alpha}{-\tan \alpha - \tan \alpha} = \frac{r \tan \alpha}{-r \tan \alpha} = -1 \quad (4)$$

$$\frac{\pi}{12} \times \frac{12}{\pi} = 1 \text{ rad} \rightarrow \frac{r \tan(\frac{\pi}{4} - 1 \text{ rad}) + \tan(\frac{\pi}{4} + 1 \text{ rad})}{r \tan(\pi - 1 \text{ rad}) - \tan(\frac{\pi}{4} - 1 \text{ rad})}$$

$$= \frac{r \tan 1 \text{ rad} - \tan 1 \text{ rad}}{-r \tan 1 \text{ rad} - \tan 1 \text{ rad}} = \frac{1}{-r - \frac{1}{r}} = \frac{-1}{r^2 + 1}$$

5

$$\frac{\sin^2 \theta + \cos^2 \theta + r \sin \theta \cos \theta + \sin^2 \theta + \cos^2 \theta - r \sin \theta \cos \theta}{\sin^2 \theta - \cos^2 \theta} = \frac{r \sin^2 \theta + \cos^2 \theta}{\sin^2 \theta - \cos^2 \theta} = r \quad (5)$$

(6)

$$r \sin^2 \theta - r \cos^2 \theta = r \sin^2 \theta + r \cos^2 \theta \rightarrow \sin^2 \theta = \cos^2 \theta$$

10

$$\tan^2 \theta = 1$$

$$\frac{1}{\cos^2 \theta} \rightarrow \frac{\tan^2 \theta - r + 1 + \tan^2 \theta}{\tan^2 \theta + r - 1 - \tan^2 \theta} = r \rightarrow r \tan^2 \theta - 1 = r$$

(7)

$$\tan^2 \theta = \frac{r+1}{r}$$

15

$$\text{الف) } \cos^2 45^\circ = \frac{1 + \cos 90^\circ}{2} = \frac{1 + 0}{2} \rightarrow \cos 45^\circ = \frac{\sqrt{1+0}}{2} \quad (1)$$

$$\text{ب) } \sin^2 45^\circ = \frac{1 - \cos 90^\circ}{2} = \frac{1 - 0}{2} \rightarrow \sin 45^\circ = \frac{\sqrt{1-0}}{2}$$