

.. یکتا انوری - هم B ..

سؤال ١:

(الف)

(ب)



$$3:54' \quad 4 \times 30 + 12 + 6 = 153^\circ$$

$$\frac{54}{6} = 9 \rightarrow 54 - 27 = 27$$

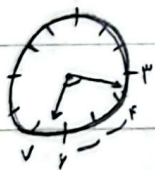
$$|5,5m - 30h| \Rightarrow 11 \times 27 - 90 = 207^\circ$$

$$\Rightarrow 90 - 11 \times 27 = -207 = 153^\circ \quad \checkmark$$

C

سؤال ٢: (الف)

(ب)



$$6:18' \quad 2 \times 30 + 2 \times 6 + 9 = 81^\circ$$

$$\frac{18}{6} = 3$$

$$|5,5m - 30h| \rightarrow 30 \times 6 - 5,5 \times 18 = 81^\circ$$

C

$$S = \frac{\alpha}{r} R^2 \rightarrow \frac{\pi}{12} \times 9 = \frac{3\pi}{4} \text{ cm}^2$$

سؤال ٣:

C

$$2R + \widehat{AB} = 4 + \left(\frac{\pi}{4} \times 3\right) = 4 + \frac{\pi}{4} \text{ cm}$$

$$S_{\triangle ABC} = \frac{1}{2} \times 10 \times 5 \times \sin 45^\circ = 10\sqrt{3} \text{ cm}^2$$

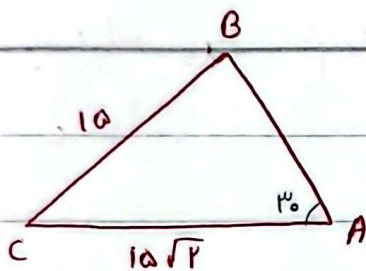
سؤال ٤:

$$P = a + b + c = 5 + 11 + \alpha = 20$$

C

$$\alpha = \sqrt{24 + 25 - 20 \times \frac{1}{2} \times 2} = 7$$

Date:



$$\hat{A} + \hat{B} + \hat{C} = 180^\circ \rightarrow \hat{A} = 30^\circ$$

سؤال ٥ :

١, ١, ٥

$$B = \frac{\pi}{2}, \quad c = \frac{r\pi}{12}$$

$$\text{سؤال ٥: } \sin A = \frac{\sin B}{10} = \frac{\sin 30^\circ}{10\sqrt{2}} \rightarrow \frac{1}{30} = \frac{\sin B}{10\sqrt{2}} \rightarrow \sin B = \frac{10\sqrt{2}}{30} = \frac{\sqrt{2}}{3} \Rightarrow \hat{B} = 45^\circ$$

$$\hat{C} = 180^\circ - (45^\circ + 30^\circ) = 180^\circ - 75^\circ = 105^\circ$$

$$\frac{1.0}{18.0} = \frac{x(\text{Rad})}{\pi} \rightarrow x = \frac{r\pi}{12}$$

$$\frac{\tan(\pi - \alpha) + 3\tan(\pi + \alpha)}{\tan(\pi - \alpha) - \tan(\pi + \alpha)} = \frac{-\tan\alpha + 3\tan\alpha}{-\tan\alpha - \tan\alpha} = \frac{2\tan\alpha}{-2\tan\alpha} = -1$$

سؤال ٦ :

$$A = \frac{2\tan 45^\circ + \tan 105^\circ}{3\tan 145^\circ - \tan 75^\circ} =$$

سؤال ٧ : ١, ٥

$$\tan 45^\circ = \tan(30^\circ + 15^\circ) = \frac{\frac{\sqrt{3}}{3} + 1}{1 - \frac{\sqrt{3}}{3}} = \frac{3 + \sqrt{3}}{3 - \sqrt{3}}, \quad \tan 75^\circ = \tan(45^\circ + 30^\circ) = \frac{1 + \frac{\sqrt{3}}{3}}{1 - \frac{\sqrt{3}}{3}} = \frac{3 + \sqrt{3}}{3 - \sqrt{3}}$$

$$\tan 105^\circ = \tan(45^\circ + 60^\circ) = \frac{1 + \sqrt{3}}{1 - \sqrt{3}}, \quad \tan 145^\circ = \tan(135^\circ + 10^\circ) = \frac{-1 + \frac{\sqrt{3}}{3}}{1 + \frac{\sqrt{3}}{3}} = \frac{-\sqrt{3} - 1}{\sqrt{3} + 1}$$

$$\Rightarrow \tan A = \frac{2\left(\frac{3 + \sqrt{3}}{3 - \sqrt{3}}\right) + \left(\frac{1 + \sqrt{3}}{1 - \sqrt{3}}\right)}{3\left(\frac{-\sqrt{3} - 1}{\sqrt{3} + 1}\right) - \left(\frac{3 + \sqrt{3}}{3 - \sqrt{3}}\right)}$$

$$\frac{\pi}{4} = \left(\frac{\pi}{4}\right) \times \frac{1}{2} = \frac{\pi}{8} = 15^\circ$$

$$A = \frac{2\tan\left(\frac{\pi}{4} - 15^\circ\right) + \tan\left(\frac{\pi}{4} + 15^\circ\right)}{3\tan(\pi - 15^\circ) - \tan\left(\frac{\pi}{4} - 15^\circ\right)} = \frac{2\cot 15^\circ - \cot 15^\circ}{-3\tan 15^\circ - \cot 15^\circ}$$

$$A = \frac{\cot 15^\circ}{-3\tan 15^\circ - \cot 15^\circ} \xrightarrow{\tan 15^\circ = a} \frac{\frac{1}{a}}{-3a - \frac{1}{a}} = \frac{-1}{3a^2 + 1}$$

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$$\frac{\sin x + \cos x}{\sin x - \cos x} + \frac{\sin x - \cos x}{\sin x + \cos x} = \mu \rightarrow \frac{(1 + \cancel{\mu \sin x \cos x}) + (1 - \cancel{\mu \sin x \cos x})}{\sin^2 x - \cos^2 x} = \text{سؤال ۸:}$$

$$\Rightarrow \frac{\mu}{-\cos^2 x} = \mu \rightarrow \cos^2 x = \frac{-\mu}{\mu} \rightarrow \tan^2 x = \frac{1 - \cos^2 x}{1 + \cos^2 x} = \frac{1 + \frac{\mu}{\mu}}{1 - \frac{\mu}{\mu}} = \omega$$

$$\frac{\sin^2 x - \mu \cos^2 x + 1}{\sin^2 x + \mu \cos^2 x - 1} = \mu \rightarrow \frac{\sin^2 x - \mu + \mu \sin^2 x + 1}{\sin^2 x + \mu - \mu \sin^2 x - 1} = \mu \quad \text{سؤال ۹:}$$

$$\frac{\mu \sin^2 x - 1}{-\sin^2 x + 1} = \mu \rightarrow \mu \sin^2 x - 1 = -\mu \sin^2 x + \mu \rightarrow \mu \sin^2 x = \omega \rightarrow \sin^2 x = \frac{\omega}{\mu}$$

$$\cos^2 x = 1 - \sin^2 x \rightarrow 1 - \frac{\omega}{\mu} = \frac{\mu}{\mu} \Rightarrow \tan^2 x = \frac{\omega}{\mu}$$

$$\text{الف) } \cos(4\mu, \omega) \Rightarrow \cos^2 x = \frac{1 + \cos^2 x}{2} \rightarrow \frac{1 + \frac{\sqrt{\mu}}{\mu}}{2} = \frac{\sqrt{2 + \sqrt{2}}}{2} \quad \text{سؤال ۱۰:}$$

$$\text{ب) } \sin(4\mu, \omega) \Rightarrow \frac{1 - (-\frac{\sqrt{\mu}}{\mu})}{2} = \frac{\sqrt{2 + \sqrt{2}}}{2}$$

(۱, ۷۵)

$$\sin^2 4\mu, \omega = \frac{1 - \cos 140^\circ}{2} \rightarrow \sin^2 4\mu, \omega = \frac{1 - (-\frac{\sqrt{2}}{2})}{2}$$

$$\sin 4\mu, \omega = \frac{\mu + \sqrt{\mu}}{\epsilon} \rightarrow \sin 4\mu, \omega = \frac{\sqrt{2 + \sqrt{2}}}{2} \leq \frac{\sqrt{2 + \sqrt{2}}}{2}$$

۴۷, ۵ رادیان صده است بنابرین نیوس آن صده مثبت دارد پس در جذر رفتن صحت (+)

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