



$$r = 4, \theta = 120^\circ$$

(الف)

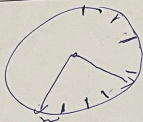
$$\frac{1}{4} \times 2\pi = \pi$$

(۲)

$$= 120 + 2\pi + 9 = 139$$

$$360 - 120 = 240$$

$$| \omega, \omega \times \omega (2\pi \times 30) | = 20\pi$$



$$r = 2, \theta = 90^\circ$$

$$90 + 9 + 12 = 111$$

(الف)

(۲)

$$\frac{1}{2} \times \pi = \frac{\pi}{2}$$

$$| \omega, \omega \times 18 - 18 | = 18$$

$$S = \frac{1}{2} r^2 \theta = \frac{\pi}{14} \times 9 = \frac{9\pi}{14}$$

(الف)

$$P = 2 \times 9 + \pi = 18 + \pi$$

(۲)

(ب)

$$S = \frac{1}{2} \times \frac{\pi}{4} \times 18 = \frac{9\pi}{4}$$

(۱)

(الف)

$$C13 = \left| \sqrt{\frac{\pi}{4}} C13 \right| \rightarrow C13 = \frac{1}{\sqrt{\pi}} P = \frac{1}{\sqrt{\pi}} + 13$$

این سوال قبلاً به تفصیل سنجیده شده است

$$\frac{\sin A}{\sin B} = \frac{a}{b} = \frac{10\sqrt{2}}{10\sqrt{2}}$$

$$\sin A = \frac{10\sqrt{2}}{10\sqrt{2}}$$

(۲)

$$B = \frac{2\pi}{\pi} \quad C = \frac{\sqrt{\pi}}{\pi}$$

$$\frac{\tan(\pi - \alpha) + \tan(\pi + \alpha)}{\pi}$$

$$\frac{\tan(\pi - \alpha) - \tan(\pi + \alpha)}{\pi} = \frac{-1 - (-1)}{\pi} = 0$$

$$\frac{\tan(\frac{\pi}{4} - \alpha) + \tan(\frac{\pi}{4} + \alpha)}{\tan(\frac{\pi}{4} - \alpha) - \tan(\frac{\pi}{4} + \alpha)} = \frac{\cot \alpha}{2 - \tan \alpha}$$

$$= \frac{1}{\tan \alpha}$$

$$\frac{\sin^4 \alpha + \cos^4 \alpha + 2 \sin^2 \alpha \cos^2 \alpha + \sin^4 \alpha + \cos^4 \alpha - 2 \cos^2 \alpha \sin^2 \alpha}{\sin^4 \alpha - \cos^4 \alpha}$$

$$\Rightarrow \cos^4 \alpha \leq \frac{1}{4}$$

$$\frac{\sin^4 \alpha + \cos^4 \alpha + 2 \sin^2 \alpha \cos^2 \alpha - \sin^4 \alpha - \cos^4 \alpha}{\sin^4 \alpha + \cos^4 \alpha - \sin^2 \alpha \cos^2 \alpha} = \frac{2 \sin^2 \alpha \cos^2 \alpha}{\cos^4 \alpha}$$

$$\cos^2 \alpha \geq 2 \sin^2 \alpha$$

$$\cos(4\pi/5) = \cos^2(2\pi/5) = \frac{1 + \cos(4\pi/5)}{2} = \cos^2(2\pi/5) = \frac{1 + \sqrt{\frac{1 + \sqrt{5}}{2}}}{2}$$

$$\sin(4\pi/5) = \sin^2(2\pi/5) = \frac{1 - \cos(4\pi/5)}{2} = \frac{1 - \sqrt{\frac{1 + \sqrt{5}}{2}}}{2}$$

$$\frac{1 - \cos(4\pi/5)}{2} = \frac{1 - \sqrt{\frac{1 + \sqrt{5}}{2}}}{2}$$

$$\text{ب) } BC^r = AB^r + AC^r - 2AB \cdot AC \cos 40^\circ$$

سوال ۱۴

$$\rightarrow BC^r = r\omega + 4r - 2 \times \omega \times 1 \times \frac{1}{r} = 4 \rightarrow BC = 4$$

$$P_{ABC} = \omega + 1 + 4 = 10$$

$$\frac{\pi}{12} \times \frac{180^\circ}{\pi} = 15^\circ$$

سوال ۱۷

$$A = \frac{r \tan(\frac{\pi}{4} - 15^\circ) + \tan(\frac{\pi}{4} + 15^\circ)}{r \tan(\pi - 15^\circ) - \tan(\frac{\pi}{4} - 15^\circ)} = \frac{r \cot 15^\circ - \cot 15^\circ}{-r \tan 15^\circ - \cot 15^\circ} =$$

$$\frac{\cot 15^\circ}{-r \tan 15^\circ - \cot 15^\circ} = \frac{\frac{1}{a}}{-ra - \frac{1}{a}} = \frac{-1}{ra^2 + 1}$$