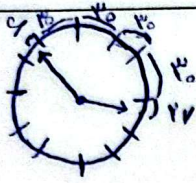


نام و نام خانوادگی: مهدی... پاسخنامه تشریحی تکلیف شماره ۱۹... کلاس: دوم... الف



$$30^\circ$$

$$1 \times 4 = 4$$

$$30 \div 2 = 15$$

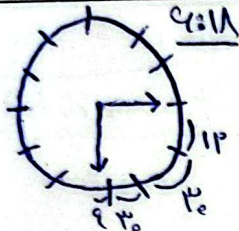
$$30 + 30 + 30 + 30 + 4 + 27 = 151$$

(۲)

۱

$$\alpha = |210^\circ - 30^\circ| \Rightarrow |(210 \times 30) - (30 \times 3)| = 207 \times$$

$$300 - 207 = 93$$



$$11 \div 2 = 5.5$$

$$2 \times 4 = 8$$

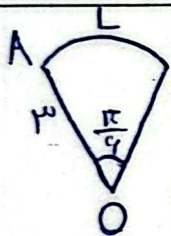
$$30 + 30 + 9 + 12 = 81$$

(۲)

۲

$$\alpha = |210^\circ - 30^\circ| \Rightarrow |(210 \times 11) - (30 \times 4)| = 110$$

$$300 - 11 = 289$$



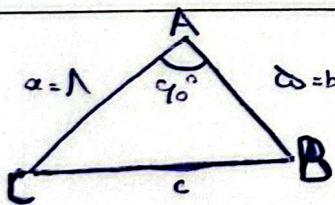
$$S = \frac{\alpha}{2} \times R^2 \Rightarrow \frac{\pi}{2} \times 9 = \frac{\pi}{2} \times 9 = \frac{9\pi}{2} = \frac{3\pi}{2}$$

$$L = R \times \alpha \Rightarrow 3 \times \frac{\pi}{3} = \frac{3\pi}{3} = \pi$$

$$P = 3 + 3 + \frac{\pi}{3} = 6 + \frac{\pi}{3}$$

(۲)

۳



$$S = \frac{1}{2} ab \sin C = \frac{1}{2} \times 1 \times 2 \times \sin 60^\circ = \frac{1}{2} \times 2 \times \frac{\sqrt{3}}{2} = \frac{\sqrt{3}}{2}$$

$$c^2 = a^2 + b^2 - 2ab \cos C$$

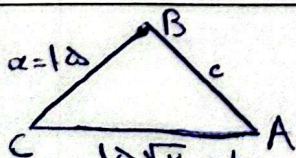
$$c^2 = 1^2 + 2^2 - 2 \times 1 \times 2 \times \cos 60^\circ = 1 + 4 - 2 \times 1 \times 2 \times \frac{1}{2} = 5 - 2 = 3$$

$$\Rightarrow c = \sqrt{3}$$

$$P = 1 + 2 + \sqrt{3} = 3 + \sqrt{3}$$

(۲)

۴



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\frac{1}{\sin 15^\circ} = \frac{10\sqrt{2}}{\sin B} \Rightarrow \frac{1}{\frac{1}{2}} = \frac{10\sqrt{2}}{\sin B} \Rightarrow \sin B = \frac{10\sqrt{2}}{2} = 5\sqrt{2}$$

$$\Rightarrow B = 45^\circ, c = 10 - 4 = 6$$

$$\frac{\text{Rad}}{\pi} = \frac{D}{180} \Rightarrow \frac{\text{Rad}}{\pi} = \frac{60}{180} \Rightarrow \text{Rad} = \frac{\pi}{3}$$

(۲)

۵

$$\frac{\tan(\pi - \alpha) + r \tan(\pi + \alpha)}{\tan(r\pi - \alpha) - \tan(r\pi + \alpha)} = \frac{-\tan \alpha + r \tan \alpha}{-\tan \alpha - \tan \alpha} = \frac{r \tan \alpha}{-2 \tan \alpha} = \boxed{-\frac{r}{2}}$$

(r)

6

$$\alpha = \tan \frac{\pi}{11} = \tan 18^\circ \Rightarrow A = \frac{r \tan 18^\circ + \tan 18^\circ}{r \tan 18^\circ - \tan 18^\circ} \rightarrow \tan 18^\circ = \tan(90^\circ + 18^\circ) = \frac{\tan 90^\circ + \tan 18^\circ}{1 - \tan 90^\circ \tan 18^\circ}$$

$$= \frac{\sqrt{r} + \alpha}{1 - \sqrt{r} \alpha} \Rightarrow \tan 18^\circ = \tan(90^\circ + 18^\circ) = -\cot 18^\circ = -\frac{1}{\alpha}, \tan 18^\circ = -\tan 18^\circ = -\alpha$$

$$\tan 18^\circ = \tan 18^\circ = \frac{\sqrt{r} + \alpha}{1 - \sqrt{r} \alpha} \Rightarrow A = \frac{r \times \frac{\sqrt{r} + \alpha}{1 - \sqrt{r} \alpha} - \frac{1}{\alpha}}{-r \alpha - \frac{\sqrt{r} + \alpha}{1 - \sqrt{r} \alpha}} = \frac{r \alpha^2 + r \sqrt{r} \alpha - 1}{\alpha(r \sqrt{r} \alpha - r \alpha - \sqrt{r})}$$

سوال

0

Y

$$\frac{\sin x + \cos x}{\sin x - \cos x} + \frac{\sin x - \cos x}{\sin x + \cos x} = \frac{(\sin x + \cos x)^2 + (\sin x - \cos x)^2}{(\sin x - \cos x)(\sin x + \cos x)}$$

$$\Rightarrow (\sin x + \cos x)^2 + (\sin x - \cos x)^2 = (\sin^2 x + 2 \sin x \cos x + \cos^2 x) + (\sin^2 x - 2 \sin x \cos x + \cos^2 x)$$

$$= 2(\sin^2 x + \cos^2 x) = 2 \times 1 = 2$$

$$\Rightarrow (\sin x - \cos x)(\sin x + \cos x) = \sin^2 x - \cos^2 x = -(\cos^2 x - \sin^2 x) = -\cos 2x$$

$$\Rightarrow \frac{2}{-\cos 2x} = -\frac{2}{\cos 2x} \Rightarrow \frac{2}{\cos 2x} = 2 \Rightarrow \cos 2x = 1$$

$$\tan^2 x = \frac{1 - \cos 2x}{1 + \cos 2x} \Rightarrow \tan^2 x = \frac{1 - 1}{1 + 1} = \frac{0}{2} = 0$$

(r)

A

$$\frac{\sin^2 x - r \cos^2 x + 1}{\sin^2 x + r \cos^2 x - 1} = f$$

$$\sin^2 x = 1 - \cos^2 x \Rightarrow \sin^2 x - r \cos^2 x + 1 = (1 - \cos^2 x) - r \cos^2 x + 1 = 2 - r \cos^2 x$$

$$\sin^2 x + r \cos^2 x - 1 = (1 - \cos^2 x) + r \cos^2 x - 1 = r \cos^2 x$$

$$\frac{2 - r \cos^2 x}{r \cos^2 x} = f \xrightarrow{\times \cos^2 x} 2 - r \cos^2 x = f \cos^2 x \Rightarrow \cos^2 x = \frac{2}{r + f}$$

$$\tan^2 x = \frac{\sin^2 x}{\cos^2 x} = \frac{1 - \cos^2 x}{\cos^2 x} = \frac{1 - \frac{2}{r + f}}{\frac{2}{r + f}} = \frac{\frac{r + f - 2}{r + f}}{\frac{2}{r + f}} = \frac{r + f - 2}{2}$$

(r)

9

$$\cos(211^\circ) \Rightarrow \cos^2 \alpha = \frac{1 + \cos 2\alpha}{2} \rightarrow \cos^2 211^\circ = \frac{1 + \cos 422^\circ}{2}$$

$$\rightarrow \cos 211^\circ = \pm \sqrt{\frac{1 + \cos 422^\circ}{2}} = \sqrt{\frac{1 + \cos 42^\circ}{2}} = \frac{\sqrt{1 + \cos 42^\circ}}{2}$$

$$\sin(411^\circ) \Rightarrow \frac{\sqrt{1 + \cos 42^\circ}}{2} \leftarrow \cos 211^\circ \text{ و } \sin 411^\circ \text{ (من دوازدهم بهم اند)}$$

(r)

10

$$\frac{r \tan\left(\frac{\pi}{r} - \alpha\right) + \tan\left(\frac{\pi}{r} + \alpha\right)}{r \tan(\pi - \alpha) - \tan\left(\frac{r\pi}{r} - \alpha\right)} = \frac{r \overset{ct\alpha}{\cancel{ct\alpha}} - \cancel{ct\alpha}}{-r \tan \alpha - ct\alpha} =$$

$$\frac{\frac{1}{a}}{-ra - \frac{1}{a}} = \boxed{\frac{-1}{ra^r + 1}}$$