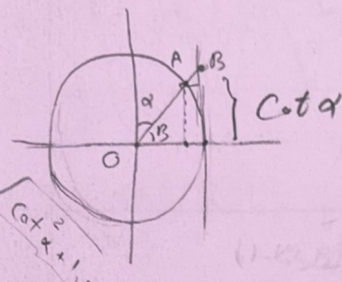


نام و نام خانوادگی: عارف پور محمدی پاسخنامه تشریحی تکلیف شماره ۱۴ ... کلاس دوازدهم

1

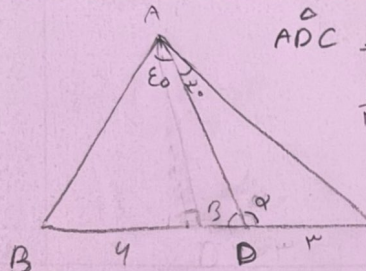


$$\overline{OB} = \sqrt{\cot^2 \alpha + 1} \rightarrow \sqrt{\frac{1}{\sin^2 \alpha}} = \frac{1}{\sin \alpha}$$

$\frac{1}{\sin \alpha} = 1 \Rightarrow \sin \alpha = 1$

۲

2



$\triangle ADC \Rightarrow \frac{3}{\sin \alpha} = \frac{AC}{\sin \alpha} \rightarrow 4 \sin \alpha = AC$

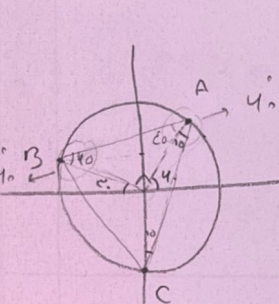
$\alpha + \beta = \pi \rightarrow \sin \alpha = \sin \beta$

$\triangle ABD \Rightarrow \frac{4}{\sqrt{2} \sin \alpha} = \frac{AB}{\sin \alpha} \rightarrow 4\sqrt{2} \sin \alpha = AB$

$\frac{AB}{AC} = \frac{4\sqrt{2}}{4} = \sqrt{2}$

۲

3



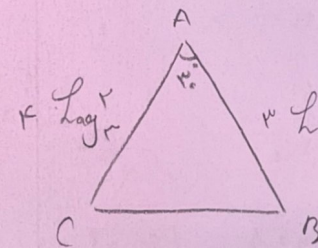
$\left(\frac{\sqrt{2}+1}{2}\right)^2 + \left(\frac{\sqrt{2}-1}{2}\right)^2 = \frac{2 + 2\sqrt{2} + 1 + 2 - 2\sqrt{2} + 1}{4} = 2$

$\frac{\sqrt{2}}{2} \alpha^2 \Rightarrow \frac{\sqrt{2}}{2} \alpha^2 = \sqrt{3} = S_{\triangle ABC}$

ب) فقط ۴ و ۳ × ۲ = ۴

۱

4



$S = \frac{1}{2} \times 4 \times 3 \times \sin \alpha = 6 \sin \alpha$

$6 \sin \alpha = 3 \Rightarrow \sin \alpha = \frac{1}{2}$

مساحت ۳

۲

5

$\eta = \cos \alpha \rightarrow 2 \cos^2 \alpha - \cos^2 \alpha - \sin^2 \alpha (2 \sin^2 \alpha - 1)$

$\cos^2 \alpha (2 \cos^2 \alpha - 1)$

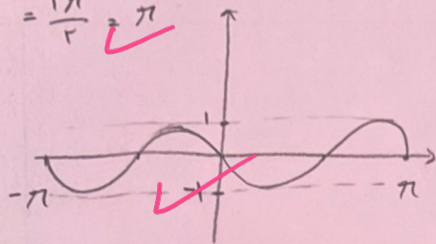
$\Rightarrow \cos^2 \alpha (\cos^2 \alpha + \sin^2 \alpha) = 1$

$\cos^2 \alpha = 1 \Rightarrow \sin^2 \alpha = 0$

۲

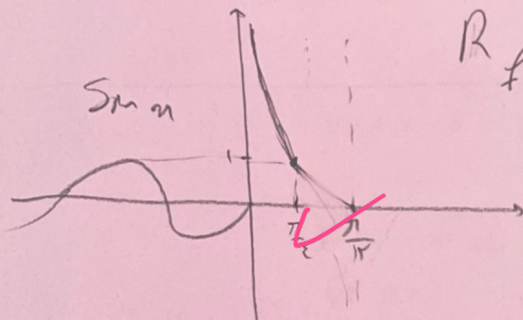
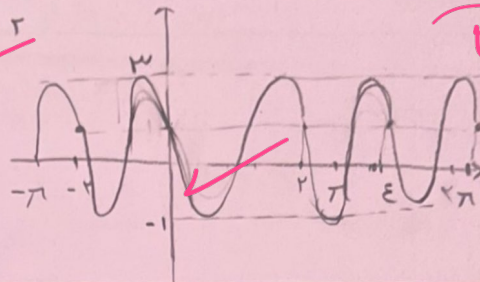
Case) $y = \sin^2 x$

$T = \frac{2\pi}{\omega} = \pi$



$y = \cos(\frac{\pi}{2} + \pi n) + 1 \rightarrow -\sin \pi n + 1$

$T = \frac{2\pi}{\pi} = 2$



$R_f \in [-1, +\infty)$

$f(n) = a + \frac{b}{r} \sin(rn) \times \cos(rn)$

$\rightarrow a + \frac{b}{r} \sin(rn) \quad T = \frac{2\pi}{\omega} = \frac{2\pi}{rc} \Rightarrow rc = a \Rightarrow c = \frac{a}{r}$

$a + \frac{b}{r} = r$

$a - \frac{b}{r} = 0 \Rightarrow ra = b \rightarrow a = r$

$\frac{bc}{a} \Rightarrow \frac{1 \times \frac{a}{r}}{r} = \boxed{\frac{a}{r^2}}$

$-a + c = r \quad f(n) = a \cos bn + c \quad T = \pi = \frac{2\pi}{\omega}$

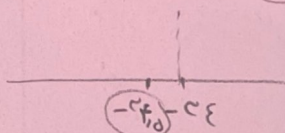
$a + c = -r \quad \hookrightarrow -\cos \pi n = 1$

$c = -1 \quad a = -r$

$\hookrightarrow 0 = -r \cos \pi n - 1 \rightarrow -\frac{1}{r} = \cos \pi n$

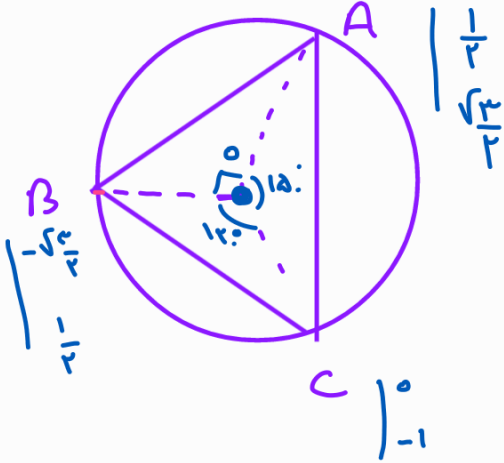
$1 + \tan^2 \pi n = \frac{1}{\cos^2 \pi n} \rightarrow 1 + \tan^2 \pi n = \frac{1}{\frac{1}{r^2}} \Rightarrow \tan^2 \pi n = r^2 \Rightarrow |\tan \pi n| = r$

$-1 - (r \times 1) = -r - 1 \rightarrow -r - 1$



$-\frac{1}{r} n + 1 \xrightarrow{n=1,0} -\frac{1}{r} + 1 = \frac{1}{r}$

$f(1,0) = f(-r,0) = \boxed{\frac{1}{r}} = \text{جواب}$



$$S_{AOC} = 1 \times 1 \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$$

$$S_{OAR} = 1 \times 1 \times \frac{1}{2} = \frac{1}{2}$$

$$S_{OBC} = 1 \times 1 \times \frac{1}{2} \times \frac{\sqrt{r}}{2} = \frac{\sqrt{r}}{4}$$

$$S_{ABC} = \frac{1}{4} + \frac{1}{2} + \frac{\sqrt{r}}{4} = \frac{3 + \sqrt{r}}{4}$$

$$BC^2 = 1^2 + 1^2 - 1 \times 1 \times 2 \times \frac{1}{2} = 1 + 1 + 1 = 3 \rightarrow BC = \sqrt{3} \quad \text{ب)}$$

$$AC^2 = 1^2 + 1^2 - 1 \times 1 \times 2 \times \frac{\sqrt{r}}{2} = 1 + 1 + \sqrt{r} \rightarrow AC = \sqrt{2 + \sqrt{r}}$$

$$AB^2 = 1^2 + 1^2 \rightarrow AB = \sqrt{2}$$

$$P_{ABC} = \sqrt{2} + \sqrt{3} + \sqrt{2 + \sqrt{r}}$$