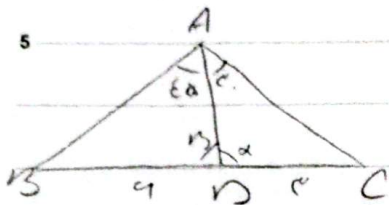


$$r + \alpha = 90^\circ$$

$$\tan\left(\frac{r}{r} - \alpha\right) = \cot \alpha = \frac{BT}{AT} \Rightarrow \cot \alpha + \frac{OT}{AT} = \frac{OB}{AT} = \cot \alpha + 1 = \frac{OB}{AT}$$

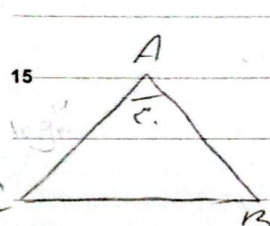
$$\text{Case (1)} \quad OB = \sqrt{\cot^2 \alpha + 1} \cdot \frac{1}{|\sin \alpha|} \quad OB - 1 = AB \Rightarrow \frac{1 - \sin^2 \alpha}{\sin \alpha} = AB$$



$$\frac{m}{\sin B} = \frac{c}{\frac{r}{r}} \Rightarrow AB = \frac{4 \sin B r}{\sqrt{r}}$$

$$\frac{m}{\sin \alpha} = \frac{r}{\frac{1}{r}} \Rightarrow AC = \frac{r}{\sin \alpha}$$

$$\frac{AB}{AC} = \frac{\frac{4 \sin B r}{\sqrt{r}}}{\frac{r}{\sin \alpha}} = \frac{4 \sqrt{r}}{r} = \frac{4}{\sqrt{r}}$$



$$\frac{1}{r} \log \frac{r}{r} \cdot \log \frac{r}{r} \times \sin \frac{r}{r}$$

$$\frac{\log r}{\log r} = \frac{r \log r}{\log r} \times \frac{r \log r}{\log r} \times \frac{1}{r}$$

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

$$\cos^2 \alpha (\cos^2 \alpha + \sin^2 \alpha) = 1 \Rightarrow \cos^2 \alpha = 1 \quad \sin^2 \alpha = 0$$

$$21) -r \sin \alpha \cos \alpha + r$$

$$= -\sin \alpha \cos \alpha + r \Rightarrow T = \frac{r}{r} = 1$$

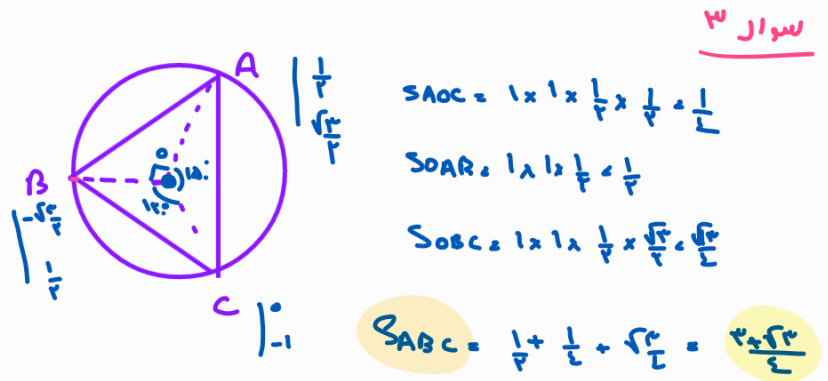
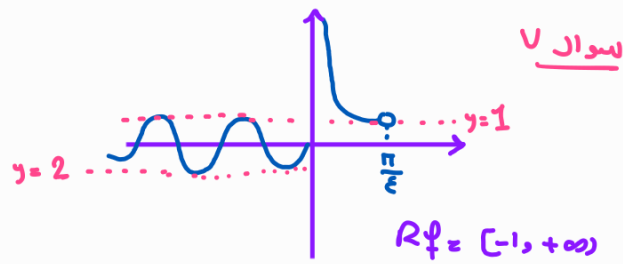
$$22) r \cos\left(\frac{17}{r} m + \frac{17}{r}\right) + 1$$

$$= -r \sin\left(\frac{17}{r} m + 1\right)$$

$$T = \frac{r}{r} = 1$$

$$30) \max, r$$

$$\min, -1$$



سوال ۸

$\sin C \cos C \sin C = \frac{1}{2} \sin C \cos C \sin C = \frac{1}{2} \sin C$
 $\frac{1}{2} \sin C$
 $a + \frac{1}{2} \sin C \rightarrow T = \frac{a}{1} \rightarrow \frac{a}{1} = \frac{a}{a} \rightarrow C = \frac{\pi}{2}$
 $\begin{cases} a + \frac{1}{2} = 1 \\ a - \frac{1}{2} = 1 \end{cases} \rightarrow a = 1, b = 1 \rightarrow \frac{b}{a} = 1$

$BC^2 = 1^2 + 1^2 - 1 \times 1 \times 2 \times \frac{1}{2} = 1 + 1 - 1 = 1 \rightarrow BC = 1$
 $AC^2 = 1^2 + 1^2 - 1 \times 1 \times 2 \times \frac{\sqrt{3}}{2} = 1 + 1 - \sqrt{3} \rightarrow AC = \sqrt{2 - \sqrt{3}}$
 $AB^2 = 1^2 + 1^2 \rightarrow AB = \sqrt{2}$
 $P_{ABC} = \sqrt{2} + \sqrt{2} + \sqrt{2 - \sqrt{3}}$

سوال ۹

$\frac{r_n}{(n)} = 2 \rightarrow b = 2r$
 $\phi(1) = -2, \phi(\frac{\pi}{2}) = -2 \rightarrow \begin{cases} a + c = -2 \\ -a + c = 2 \end{cases} \rightarrow \begin{cases} c = -1 \\ a = -3 \end{cases}$
 $\phi(r\alpha) = -2 \rightarrow -2 \cdot \sin \alpha - 1 = 0 \rightarrow \sin \alpha = -\frac{1}{2}$
 $\begin{matrix} 2\sqrt{2} \\ 1 \end{matrix} \rightarrow |\tan \alpha| = 2\sqrt{2}$

سوال ۱۰

$f(-\pi, \pi) = f(-\pi + 2\pi) = f(\pi - \pi) = f(0) = f(\pi)$
 $f(x) = \begin{cases} -\frac{1}{x} + 1 & ; -\pi \leq x \leq \pi \\ x + 2 & ; -1 \leq x < 0 \end{cases} \rightarrow f(\pi) = -\frac{1}{\pi} + 1 = \frac{1}{\pi}$