

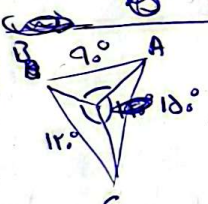
$$AB = BO - 1 \text{ و } OB = BT + 1 \text{ و } BT = \tan(\frac{\pi}{2} - \alpha) = \cot \alpha$$

$$\Rightarrow OB = \cot \alpha + 1 = \frac{1}{\sin \alpha} \Rightarrow OB = \frac{1}{\sin \alpha} \Rightarrow AB = \frac{1}{\sin \alpha} - 1 = \frac{1 - \sin \alpha}{\sin \alpha}$$

$$\frac{S_{ABD}}{S_{ADC}} = \frac{\frac{1}{2} \times h \times BD}{\frac{1}{2} \times h \times DC} = \frac{y}{1} = \frac{\frac{1}{2} \sin 30^\circ \times AD \times AB}{\frac{1}{2} \sin 30^\circ \times AD \times AC} \Rightarrow y = \frac{\frac{\sqrt{e}}{2} \times AB}{\frac{1}{2} \times AC}$$

$$\Rightarrow \frac{AB}{AC} = \sqrt{r}$$

$$A \rightarrow \begin{bmatrix} \frac{1}{r} \\ \frac{\sqrt{e}}{r} \\ \frac{1}{r} \end{bmatrix} \quad B \rightarrow \begin{bmatrix} \frac{\sqrt{e}}{r} \\ \frac{1}{r} \\ \frac{1}{r} \end{bmatrix} \quad C \rightarrow \begin{bmatrix} 0 \\ 0 \\ -1 \end{bmatrix}$$

$$S_{ABC} = \frac{1}{2} \times \begin{vmatrix} 0 & -1 \\ \frac{1}{r} & \frac{\sqrt{e}}{r} \\ \frac{\sqrt{e}}{r} & \frac{1}{r} \end{vmatrix} = \frac{1}{2} \times \left( (0 + \frac{1}{r} + \frac{\sqrt{e}}{r}) - (\frac{1}{r} - \frac{\sqrt{e}}{r} - 0) \right) = \frac{1}{2} \times \frac{\sqrt{e} + \sqrt{e}}{r} = \frac{\sqrt{e}}{r}$$


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

$$AC = r \times \sin 10^\circ = r \times \frac{1 - \cos 10^\circ}{2} = r \times \frac{1 - \frac{\sqrt{e}}{r}}{2} = \frac{\sqrt{e} + 1}{2}$$

$$BC = r \times \sin 11^\circ = \sqrt{e}$$

$$P = \frac{\sqrt{e} + \sqrt{e} + \sqrt{e}}{2}$$

$$AC \times AB \times \sin \hat{A} \times \frac{1}{2} = S_{ABC} = \frac{1}{2} \times \log^{\sqrt{e}} c \times \log^{\sqrt{e}} r \times \frac{1}{2}$$

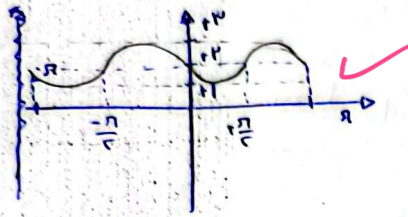
$$= \text{میانگین منبسط} = \frac{1}{2} \times \log^{\sqrt{e}} r \times \log^{\sqrt{e}} c = \frac{1}{2} \times \Sigma x c = \sqrt{e}$$

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

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

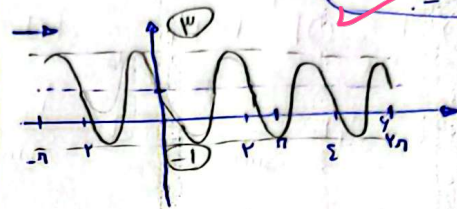
$$\Rightarrow \cos^2 \alpha = 1 \Rightarrow \sin^2 \alpha = 0$$

$$\rightarrow y = 0 - \sin 2\pi x + 2 \rightarrow T = \frac{2\pi}{2} = \pi$$



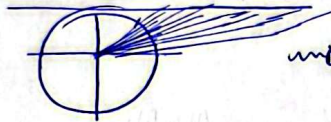
$$y = 2 \cos(\pi x + \frac{\pi}{2}) + 1 = -2 \sin(\pi x) + 1$$

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



نمودار ضربی

$$\cot \alpha, \alpha \in (0, \frac{\pi}{2}) \rightarrow$$



از روی شکل مشخص است  
 $\cot \alpha \rightarrow \alpha \in (0, \frac{\pi}{2})$   
 $\rightarrow \cot \alpha \in (1, +\infty)$

$$\sin \alpha \rightarrow \alpha \leq 0 \rightarrow \sin \alpha \in [-1, +1]$$



$$\rightarrow R_f = [1, +1] \cup (1, +\infty) = [1, +\infty)$$

$$f(x) = a + b \sin(cx) \times \cos(cx) \times \cos(cx) = a + \frac{b}{2} \sin(2cx) \cos(2cx)$$

$$= a + \frac{b}{2} \sin(2cx) \rightarrow T = \frac{2\pi}{2c} = \frac{\pi}{c} \rightarrow \text{دوره اول} \rightarrow T = \frac{\pi}{c} - \frac{\pi}{1} = \frac{\pi}{1} = \frac{\pi}{c}$$

$$\rightarrow y = a + \frac{b}{2} \sin(2cx) \rightarrow \Sigma = a + \frac{b}{2} \sin(\frac{\pi}{2}) \rightarrow \Sigma = a + \frac{b}{2}$$

$$\frac{\Sigma - a}{\frac{b}{2}} = \frac{1}{1} \rightarrow \frac{\Sigma - a}{\frac{b}{2}} = 1 \rightarrow \Sigma - a = \frac{b}{2} \rightarrow \Sigma = a + \frac{b}{2}$$

$$|a| = \frac{1+\Sigma}{2} = 1 \rightarrow a = -1 \rightarrow \frac{1-\Sigma}{2} = -1 \rightarrow \Sigma = 3$$

$$\rightarrow -3 \cos 2\alpha + 0 - 1 = 0 \rightarrow -3 \cos 2\alpha = 1 \rightarrow \cos 2\alpha = -\frac{1}{3} \rightarrow$$

$$|\tan \alpha| = \sqrt{1 - \cos^2 2\alpha} = \sqrt{1 - \frac{1}{9}} = \sqrt{\frac{8}{9}} = \frac{2\sqrt{2}}{3}$$

$$c = \omega \rightarrow f(a) = f(a+c) \rightarrow f(-c, d) = f(\pi - c, d) = f(1, d)$$

$$f(1, d) = -\frac{1}{2} \pi + 1 = -\frac{\pi}{2} + 1 = \frac{1}{2}$$