

نام و نام خانوادگی آریا طائی پاسخنامه تشریحی تکلیف شماره ۱۴... کلاس پنجم B

$$\overline{BT} = \tan B = \tan(90^\circ - \alpha) = \cot \alpha$$

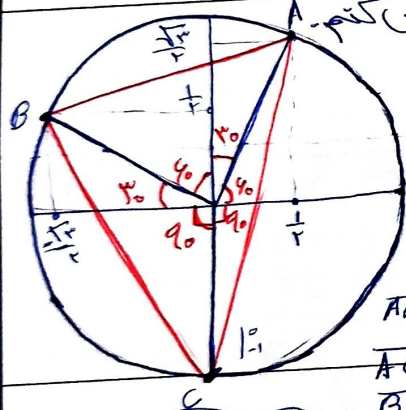
$$\overline{BT}^2 + \overline{OT}^2 = \overline{OB}^2 \rightarrow (\cot^2 \alpha + 1) = \overline{OB}^2 \rightarrow \overline{OB}^2 = \frac{1}{\sin^2 \alpha} \rightarrow \overline{OB} = \frac{1}{\sin \alpha}$$

$$\overline{OB} = \overline{AO} + \overline{AB} \rightarrow \overline{AB} = \overline{OB} - \overline{AO} = \frac{1}{\sin \alpha} - 1 = \frac{1 - \sin \alpha}{\sin \alpha}$$

$$S_{ABD} = \frac{\overline{AB} \times \overline{AD} \times \sin 60^\circ}{2} = \frac{\overline{AH} \times \overline{BD}}{2} = \frac{\overline{AH} \times 4}{2}$$

$$S_{ADC} = \frac{\overline{AD} \times \overline{AC} \times \sin 30^\circ}{2} = \frac{\overline{AH} \times \overline{DC}}{2} = \frac{\overline{AH} \times 3}{2}$$

$$\rightarrow \frac{\overline{AB} \times \overline{AD} \times \frac{\sqrt{3}}{2}}{\overline{AD} \times \overline{AC} \times \frac{1}{2}} = \frac{\overline{AH} \times 4}{\overline{AH} \times 3} \rightarrow \frac{\overline{AB}}{\overline{AC}} = \frac{4}{3} = \frac{\sqrt{2}}{\sqrt{3}}$$



$$S_{ABC} = S_{AOC} + S_{BOC} + S_{AOB}$$

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

$$S_{ABC} = \frac{1}{2} \times 1 \times 1 \times \sin 120^\circ + \frac{1}{2} \times 1 \times \frac{3}{2} \times \sin 120^\circ + \frac{1}{2} \times 1 \times 1 \times \sin 60^\circ$$

$$S_{ABC} = \frac{1}{4} + \frac{3\sqrt{3}}{8} + \frac{\sqrt{3}}{4} = \frac{3 + \sqrt{3}}{4}$$

$$\overline{AB} = \sqrt{2}$$

$$\overline{AC} = \sqrt{2 + \sqrt{3}}$$

$$\overline{BC} = \sqrt{3}$$

فاصله نقاط را پیدا کرده و با توجه به نقاط آن

$$P = \frac{1}{4} \sqrt{2 + \sqrt{3}} + \sqrt{3} + \sqrt{2}$$

$$S_{ABC} = \frac{1}{2} \times \overline{AB} \times \overline{AC} \times \sin 30^\circ = \frac{1}{2} \times \log \frac{\sqrt{2}}{\sqrt{3}} \times \log \frac{1}{\sqrt{3}} = \frac{1}{2} \times \frac{3}{\log \sqrt{3}} \times \frac{4 \log \sqrt{3}}{4} = \frac{3}{4}$$

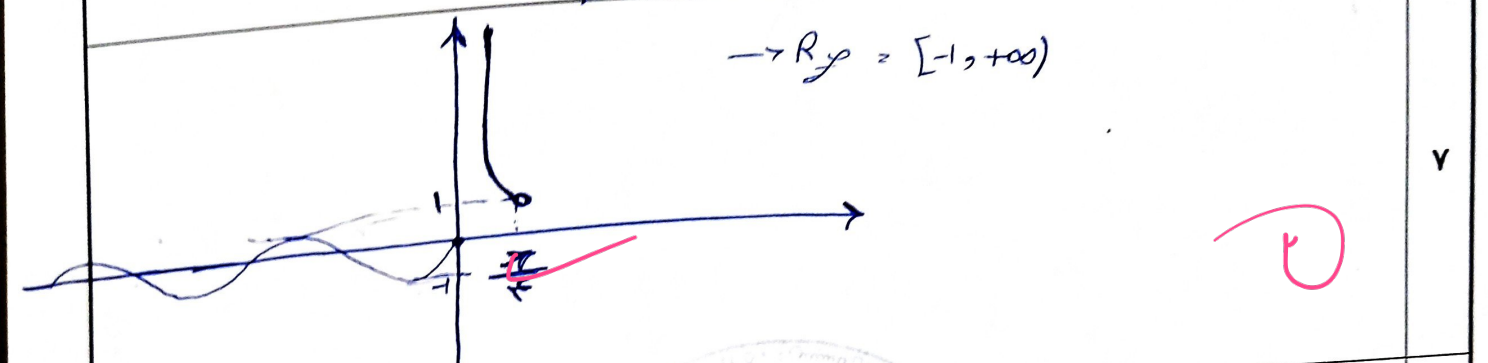
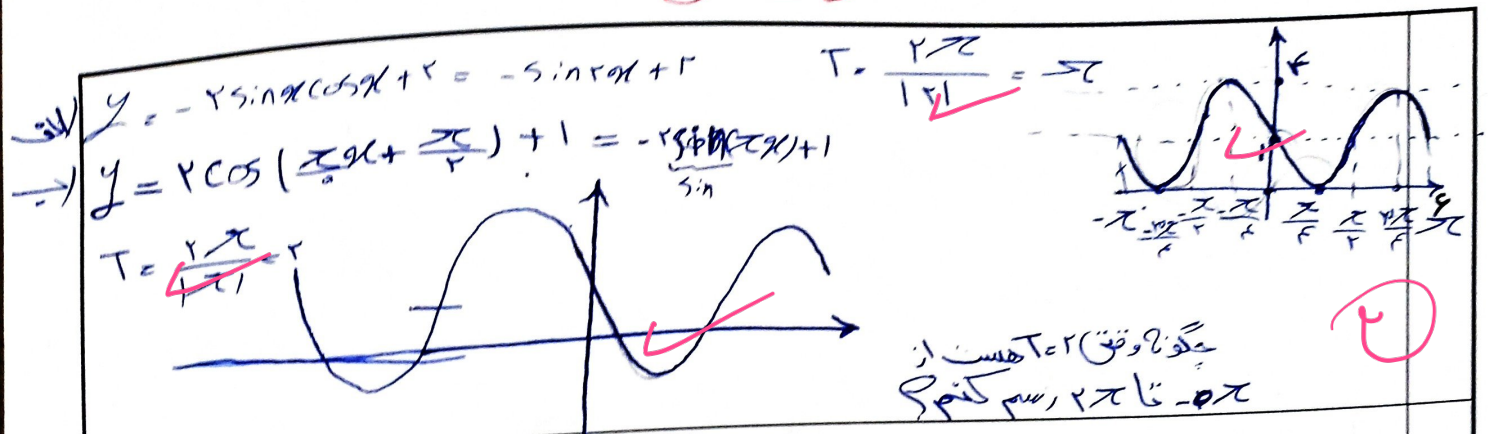
$$\frac{1}{2} \times \frac{1}{2} \times \log \frac{1}{\sqrt{3}} \times 3 \log \frac{1}{\sqrt{3}} = \frac{3}{4}$$

cos x را در ضابطه قرار می دهیم.

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

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

$$\rightarrow \cos 2\alpha = 1 \rightarrow \cos^2 \alpha + \sin^2 \alpha = 1 \rightarrow \sin^2 \alpha = 0$$



$$f(x) = a + \frac{b}{c} \sin(\frac{2\pi}{T} x) = a + \frac{b}{c} \sin(\frac{2\pi}{T} x)$$

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

$$\frac{bc}{a} = \frac{1 \times \frac{1}{2}}{\frac{1}{2}} = 1$$

$$\frac{y_{max} - y_{min}}{2} = \frac{b}{c} \rightarrow \frac{2 - 0}{2} = \frac{b}{c} \rightarrow b = c = 1$$

چرا با اینکه نمودار $\sin$ هست اما
 شروع نمودار بر روی محور y ها y_{min} است
 اتفاق افتاده مگر نباید متوسط شروع شود

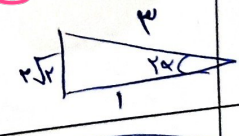
$$\frac{y_{max} + y_{min}}{2} = a \rightarrow \frac{2 + 0}{2} = a \rightarrow a = 1$$

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

$$|a| = \frac{y_{max} - y_{min}}{2} = \frac{2 - 0}{2} = 1 \rightarrow a = -1$$

$$c = \frac{y_{max} + y_{min}}{2} = \frac{2 + 0}{2} = 1$$

$$f(x) = -1 \cos(2x) = -1 \rightarrow -1 \cos(2x) - 1 = 0 \rightarrow \cos(2x) = -1$$



$$\rightarrow |\tan x| = \sqrt{2}$$

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

$$f(1 - \sqrt{2}) = f(1 \times (-1) + 1) = f(1) = \frac{1}{1} + 1 = 2$$