

١٩، ٧٥
افندي

به نام خدا

برائين

DATE / / SUBJECT:

$$OA=1, AB=2 \rightarrow \cos \pi - \alpha = \frac{OT}{1+2} = \frac{1}{1+2} \rightarrow \sin \alpha = \frac{1}{1+2} \rightarrow 2 = \frac{1}{\sin \alpha} - 1 = AB \quad (1)$$

$$\hat{O}_1 = \pi - \alpha$$

$$\frac{AB}{\sin \pi - \alpha} = \frac{4}{\sqrt{2}} \rightarrow AB = \frac{4}{\sqrt{2}} \times \sin \alpha$$

$$\frac{AC}{\sin \alpha} = \frac{2}{\frac{1}{2}} \rightarrow AC = 4 \sin \alpha$$

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

$$OB=1, OC=1, \hat{BOC} = 135^\circ \rightarrow BC = \sqrt{2} \quad (2)$$

$$B \left| -\frac{\sqrt{2}}{2}, \frac{1}{2} \right|, A \left| \frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}} \right| \rightarrow AB = \sqrt{\left(-\frac{\sqrt{2}}{2} - \frac{1}{\sqrt{2}}\right)^2 + \left(\frac{1}{2} - \frac{1}{\sqrt{2}}\right)^2} = \sqrt{\frac{4+2\sqrt{2}+1+2-2\sqrt{2}}{2}} = \sqrt{2}$$

$$\hat{ABC} = 90^\circ \rightarrow \sin_{ABC} = \frac{1}{2} \times \sqrt{2} \times \sqrt{2} \times \left(\frac{\sqrt{2}+\sqrt{2}}{2}\right) = \frac{4+2\sqrt{2}}{2} = \frac{2+\sqrt{2}}{1} = \frac{2+\sqrt{2}}{2}$$

$$AB^2 = 1^2 + 1^2 \rightarrow AB = \sqrt{2} \quad BC^2 = 1^2 + 1^2 - 2 \times 1 \times \left(-\frac{1}{2}\right) = 2 \rightarrow BC = \sqrt{2}$$

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

$$\text{مساحت} = AC + BC + AB = 1 + \sqrt{2} + \sqrt{2}$$

$$S_{ABC} = \frac{1}{2} \times \log_2 14 \times \log_2 14 \times \frac{1}{2} = \frac{1}{2} \times \frac{\log_2 14}{\log_2 2} \times \frac{\log_2 14}{\log_2 2} = 2 \quad (3)$$

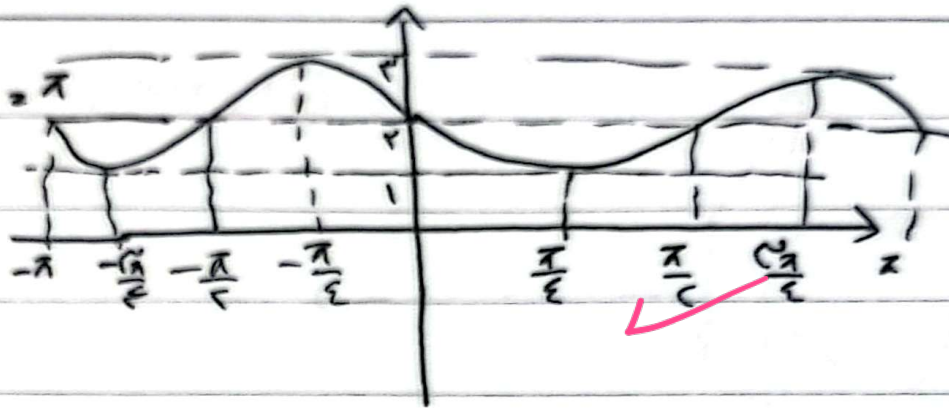
$$2 \cos^2 \alpha - \cos^2 \alpha - \sin^2 \alpha (-\cos^2 \alpha) = \cos^2 \alpha (\underbrace{2 \cos^2 \alpha - 1}_{\cos^2 \alpha}) + \sin^2 \alpha \cos^2 \alpha \quad (4)$$

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

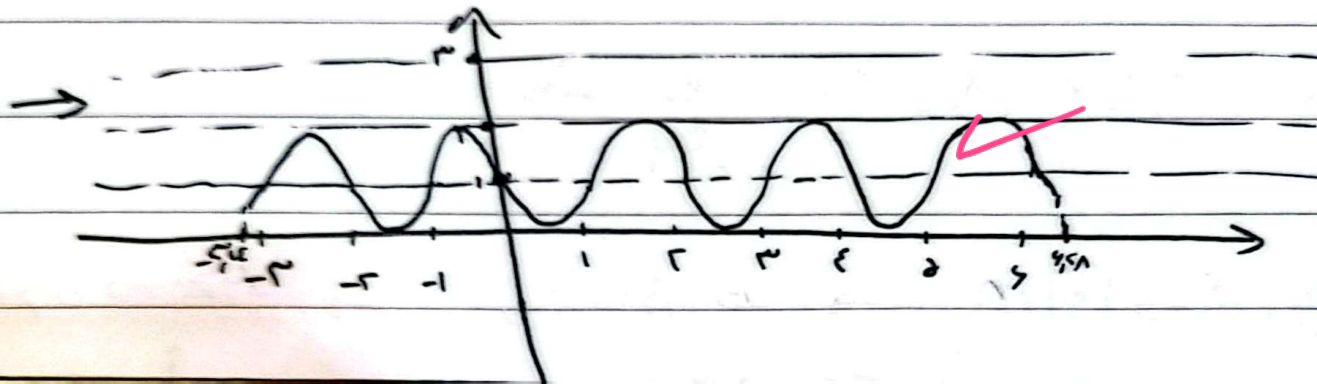
یو ایٹم

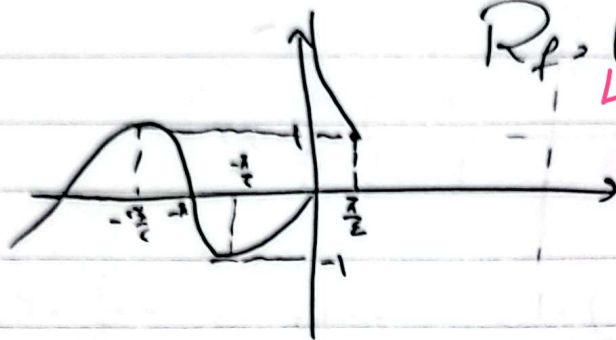
DATE / / SUBJECT:

الف) $-\sin 2x + 2$; $T = \frac{2\pi}{2} = \pi$



ب) $2\cos(4x + \frac{\pi}{4}) + 1 = 2\cos(4x + \frac{\pi}{4}) + 1 = -2\sin(4x + \frac{3\pi}{4}) + 1$; $T = \frac{2\pi}{4} = \frac{\pi}{2}$





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

⑦

$$f(x) = a + b \times \frac{1}{c} \sin(cx) ; T = \frac{\pi}{c} = \frac{\pi}{1} = \frac{\pi}{2} = \frac{\pi}{1} \xrightarrow{\text{و}} c = \frac{\pi}{\pi} = 1$$

①

$$\begin{cases} f = a + \frac{|b|}{c} \\ 0 = a - \frac{|b|}{c} \end{cases} \rightarrow \frac{|b|}{c} = f \rightarrow |b| = 2 \rightarrow b = 2 \rightarrow \text{نمودار Sin در فرم استاندارد} \rightarrow \text{خوشه‌های مثبت و در همای مثبت}$$

$$b = 1 \rightarrow a = 2$$

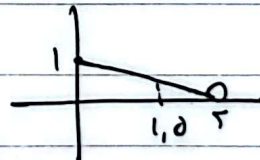
$$\frac{b}{a} = \frac{1 \times \frac{\pi}{2}}{2} = \frac{\pi}{4}$$

$$T = \pi \rightarrow \frac{\pi}{|b|} = \pi \rightarrow |b| = 2 \rightarrow b = 2, |a| + c = 2 \rightarrow c = -1, -|a| + c = -2 \rightarrow |a| = 3 \rightarrow a = -3$$

$$f(x) = -3 \cos 2x - 1, \text{ در } x = \frac{\pi}{4} \rightarrow -3 \cos 2 \times \frac{\pi}{4} - 1 = 0 \rightarrow \cos 2x = \frac{1}{3}$$

$$\rightarrow |\sin 2x| = \frac{\sqrt{8}}{3} \rightarrow |\tan 2x| = \sqrt{8}$$

$$T = \pi \rightarrow f(-\pi/2) = f(-\pi/2 + 1 \times \pi) = f(1/2) \rightarrow$$



$$\text{و } \frac{\pi}{2} = \frac{\pi}{1} \rightarrow \frac{1}{2} \rightarrow f(1/2) = f(-\pi/2) = 0.5$$