(۱۴) دوازدهم رختد B باران تسلیمی

اسفند
۲۵
دوشنبه
رمضان ۲۶
MARCH
16 MONDAY
2026
۱۴۰۴

۱-

$A = (\cos\alpha, \sin\alpha) \qquad B = (1, 0)$

$$AB = \sqrt{(1-\cos\alpha)^2 + (0-\sin\alpha)^2} = \sqrt{(1-\cos\alpha)^2 + \sin^2\alpha}$$

$$AB = \sqrt{1 - 2\cos\alpha + \cos^2\alpha + \sin^2\alpha} = \sqrt{2 - 2\cos\alpha}$$

$$\Rightarrow AB = \sqrt{2 - 2\sqrt{1-\sin^2\alpha}}$$

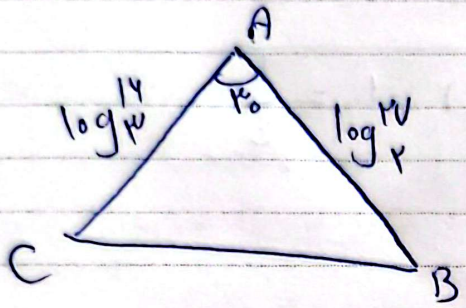
۲-

$$\frac{BD}{\sin B\hat{A}D} = \frac{AB}{\sin A\hat{D}B} \Rightarrow \frac{4}{\sin 45} = \frac{4\sin(A\hat{D}B)}{\frac{\sqrt{2}}{2}}$$

$$\frac{8\sin A\hat{D}B}{\sqrt{2}} = 4\sqrt{2}\,(A\hat{D}B)$$

$$\frac{2\sin A\hat{D}C}{\sin 30} = 4\sin A\hat{D}C \longrightarrow \sin A\hat{D}C = \sin(180 - A\hat{D}B)$$

$$\frac{AB}{AC} = \frac{4\sqrt{2}\sin A\hat{D}B}{4\sin A\hat{D}B} = \sqrt{2}$$



$AC = \log_3^{14}$ $AB = \log_2^{27}$

$S_{ABC} = ?$

-۴

آغاز نوروز (تعطیل)

فروردین

۲

یکشنبه

۲ شعبان

MARCH

22 SUNDAY

2026

۱۴۴۷

$$S_{ABC} = \frac{1}{2} ab \sin \hat{A}$$

$$\rightarrow \frac{1}{2} \times ۳ \log_2^3 \times ۴ \log_3^2 \times \frac{1}{2}$$

$$S_{\Delta ABC} = ۳ \frac{\log^3_3}{\log^2_3} \times \log^2_3 = (۳)$$

$$۲\cos^2\alpha - \cos^2\alpha - \sin^2\alpha \underbrace{(۲\sin^2\alpha - ۱)}_{۲\cos^2\alpha} = ۱ \quad -۵$$

$$۳\cos^2\alpha - \cos^2\alpha - \sin^2\alpha = ۱$$

$$\sin^2\alpha = \sqrt{\sqrt{۵} - ۱}$$

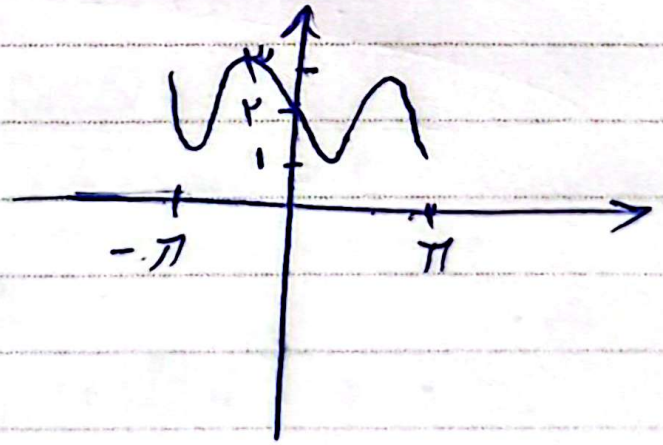
6

7

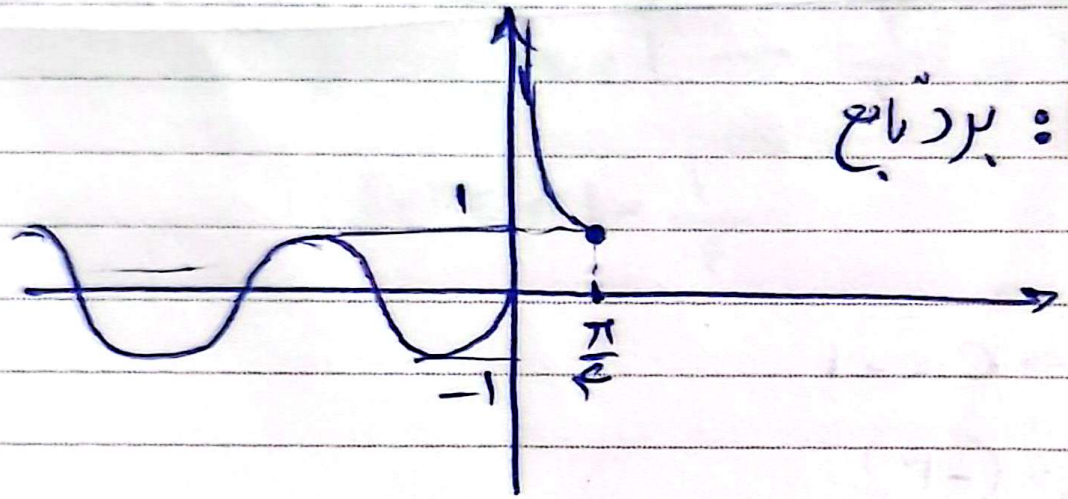
گزینه ۲) $-2\sin x\cos x + 2$

$+\frac{1}{2}\sin 2x \longrightarrow -\sin 2x + 2$ ۹-

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



-۷



برد تابع: $[-1, +\infty)$

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

$\longrightarrow f(x) = a + \frac{b}{4}\sin(4cx)$ — 8

max: $\left|\frac{b}{4}\right| + a = 4$ $\qquad T = \frac{\pi}{2} - \frac{\pi}{10} = \frac{5\pi - \pi}{10} = \frac{4\pi}{10} = \frac{2\pi}{5}$

min: $-\left|\frac{b}{4}\right| + a = 0 \xrightarrow{\text{شکل}} \frac{b}{4} \rightarrow (+)$ $\qquad \frac{2\pi}{|4c|} = \frac{2\pi}{5}$

$\hookrightarrow 2a = 4 \qquad \frac{b}{4} = 2 \rightarrow \boxed{b = 8}$

$\boxed{a = 2}$ $\qquad 4c = 5$

$\rightarrow \frac{bc}{a} = \frac{\frac{5}{4}\times 8}{2} = \textcircled{5}$ $\qquad \hookrightarrow c = \frac{5}{4}$

$f(x) = a\cos bx + c$ — 9

$\max = |a| + c = 2$

$\min = -|a| + c = -4$

$2c = -2 \rightarrow c = -1$

$|a| = 3 \xrightarrow[\text{شکل}]{} \textcircled{-3}$

$\frac{2\pi}{|b|} = \pi \quad |b| = 2 \Rightarrow f(x) = -3\cos 2x - 1$

$f(\alpha) = 0 \rightarrow -3\cos 2\alpha - 1 = 0$ $\qquad \Rightarrow |\tan 2\alpha| = \left|\frac{\sin 2\alpha}{\cos 2\alpha}\right|$

$\cos 2\alpha = \frac{-1}{3} \qquad \sin^2 2\alpha = 1 - \frac{1}{9} = \frac{8}{9} \Rightarrow \sin 2\alpha = \pm\frac{2\sqrt{2}}{3}$ $\qquad \boxed{= 2\sqrt{2}}$

THURSDAY

0 2 6
F F Y

$T = \pi$

$f(x) = f(x + \pi k)$

$k = +1$

$\frac{-9}{2} + \pi y = \frac{\pi}{2}$

$f(\frac{-9}{2}) = f(\frac{\pi}{2})$

$y = \frac{-1}{2}x + 1 \rightarrow \frac{-1}{2}(\frac{\pi}{2}) + 1 = \frac{1}{\varepsilon}$

$f(\pi\varepsilon, \omega) = \frac{1}{4}$