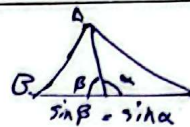


$$1 + \cot^2 \alpha = \frac{1}{\sin^2 \alpha} \Rightarrow \frac{1}{\sin^2 \alpha} \Rightarrow \frac{1}{\sin \alpha} \Rightarrow \frac{1 - \sin \alpha}{\sin \alpha} \Rightarrow \frac{1 - \sin \alpha}{\sin \alpha}$$

(۲)

۱

$$4\sqrt{2} = \frac{AB}{\sin \alpha} = \frac{AC}{\sin \alpha}$$



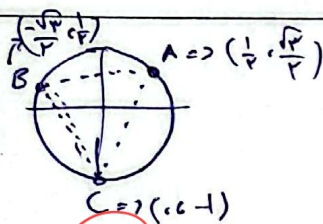
(۱)

$$\frac{AB}{\sin \alpha} = \frac{AC}{\sin \alpha} \Rightarrow \frac{AB}{AC} = 1$$

$$AC = 4\sqrt{2} \sin \alpha$$

$$AB = 4\sqrt{2} \sin \alpha$$

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



(۱,۷۵)

$$S = \left| \frac{\frac{1}{2} - \frac{\sqrt{3}}{2}}{1 - \frac{\sqrt{3}}{2}} \right| = \frac{3 + \sqrt{3}}{2}$$

۳

$$AB = \sqrt{\frac{1}{4} + \frac{3}{4}} = 1 / BC = \sqrt{3} / AC = \sqrt{\frac{1}{4} + \frac{3}{4}} = 1$$

$$\log_2^2 \Rightarrow 3 \log_2^2 / \log_2^2 \Rightarrow 3 \log_2^2 \neq 3 \log_2^2 \times 3 \log_2^2 = \frac{12}{2} \Rightarrow$$

$$12 \times \frac{1}{2} \times \sin^2 \alpha \Rightarrow \frac{12}{2}$$

✓

(۲)

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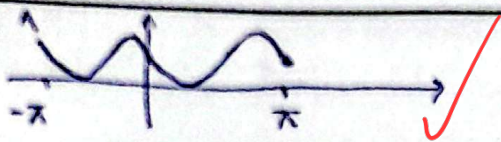
$$r^2 \sin^2 \alpha - r^2 \sin^2 \alpha (r \sin^2 \alpha - 1) \Rightarrow r^2 \cos^2 \alpha - r^2 \sin^2 \alpha (r \sin^2 \alpha - 1)$$

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

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

(۲)

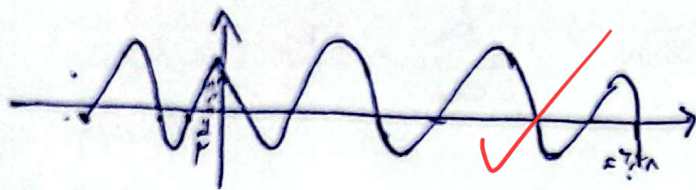
۵



$$-r \sin(x - \pi/2) + r = -\sin(x - \pi/2) + r$$

$$T = \pi$$

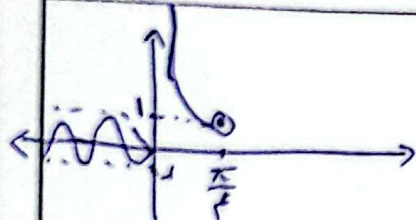
(الف)



(ب)

$$T = \pi$$

دوره تناوبی هر دو تابع (از هر یک) T و T (از هر یک)



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

(ج)

۶

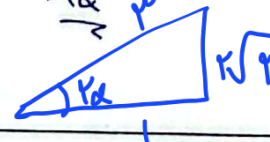
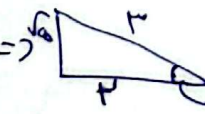
۷

$$T = \frac{r\pi}{b} = \pi \rightarrow b = r / a = -r / c = -r / \rightarrow |\tan \alpha| = \frac{r \tan \alpha}{1 - \tan \alpha} \Rightarrow$$

$$-r \cos 2\alpha - r \cos \alpha = 0 \Rightarrow -r \cos \alpha = r \Rightarrow \cos \alpha = -1$$

$$|\tan \alpha| \Rightarrow \frac{\sqrt{a}}{r}$$

$$|\tan \alpha| = r\sqrt{r}$$



(۱)

(۸)

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(۹)

(۹)

$$T_1 = \frac{r\pi}{c} / T_2 = \frac{\pi}{c} / T_3 = \frac{r\pi}{rc} = \frac{\pi}{c} / T_4(r, r, r) = \frac{r\pi}{c} \Rightarrow \frac{r\pi}{c} = \pi$$

$$c = \frac{r}{\pi} / \frac{\pi}{r} \Rightarrow f(\frac{\pi}{r}) = a + b(0)(\infty) \Rightarrow \frac{a-r}{\pi} / \frac{\pi}{r} = r$$

$$a = r$$

$$b = 1$$

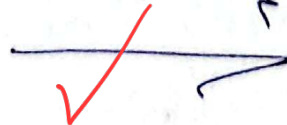
$$c = \frac{a}{r}$$

$$d = 1$$

$$\frac{b\pi}{a} = \frac{r\pi}{r} = \frac{\pi}{r}$$

$$\frac{bc}{a} = a$$

$$f(-r, \omega) \Rightarrow f(r, \omega) \Rightarrow f(+1, \omega) = \frac{1}{r}$$



(۲)

۱۰