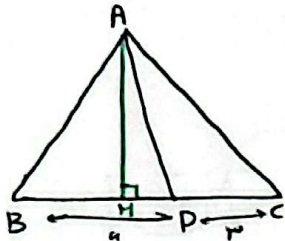


$$TB = \tan\left(\frac{\pi}{4} - \alpha\right) = \cot(\alpha)$$

-۱

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

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



$$\frac{S_{ABP}}{S_{APC}} = \frac{\frac{1}{2} AH \cdot BP}{\frac{1}{2} AH \cdot PC} = \frac{BP}{PC} = r$$

-۲

$$\frac{S_{ABP}}{S_{APC}} = \frac{\frac{1}{2} \times AB \times AD \times \frac{\sqrt{r}}{r}}{\frac{1}{2} \times AC \times AD \times \frac{1}{r}} = r = \frac{AB \sqrt{r}}{AC} \Rightarrow \sqrt{r} = AB/AC$$

$$S_T = S_1 + S_r + S_c$$

-۳ در پایین مسئله نوشته شد.

$$S = \frac{1}{r} \left(\log_{\frac{1}{r}} \frac{1}{r} \right) \left(\log_{\frac{1}{r}} \frac{1}{r} \right) \left(\sin \frac{\pi}{4} \right) = \frac{1}{r} \times \frac{1}{r} \times \frac{1}{r} \times \frac{1}{r} = \frac{1}{r^4}$$

-۴

$$H/r = H/c \Rightarrow H/r = H/c$$

-۵

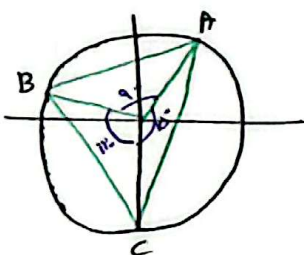
$$r \cos^r - \cos^r - r \sin^r + \sin^r = 1$$

$$\frac{r(\cos^r - \sin^r)}{\cos^r - \sin^r} + \sin^r - \cos^r$$

$$\rightarrow \frac{r \cos^r - r \sin^r + \sin^r - \cos^r}{\cos^r - \sin^r}$$

$$\cos^r - \sin^r = 1 \rightarrow \cos^r \alpha = 1 \Rightarrow \sin^r \alpha = 0$$

-۶



$$S_T = S_1 + S_r + S_c \quad (S_T) = \frac{\frac{1}{r} \times 1 \times 1}{\frac{1}{r}} + \frac{\frac{1}{r} \times 1 \times 1 \times \frac{1}{r}}{\frac{1}{r}} + \frac{\frac{1}{r} \times 1 \times 1 \times \frac{\sqrt{r}}{r}}{\frac{\sqrt{r}}{r}}$$

$$AC^r = 1 + 1 + r \times 1 \times 1 \times \frac{\sqrt{r}}{r} = \sqrt{r + \sqrt{r}}$$

$$AB = \sqrt{r} \quad B^r = 1 + 1 + r \times 1 \times 1 \times \frac{1}{r} \sqrt{r}$$

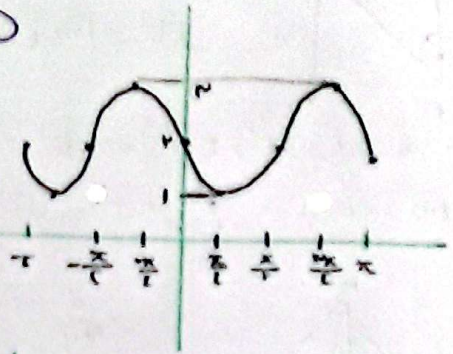
$$P = \sqrt{r + \sqrt{r}} + \sqrt{r} + \sqrt{r}$$

$$-r \sin \alpha \cos \alpha + r$$

-9

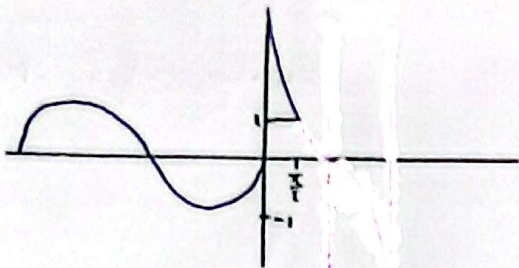
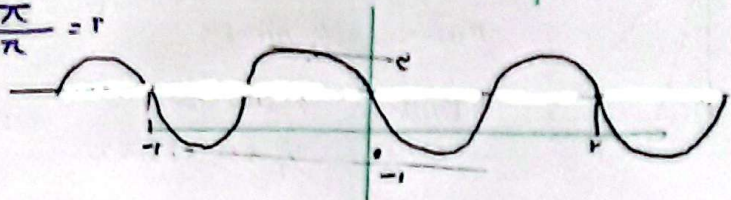
$$-r \sin \alpha + r = -\sin \alpha + r$$

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



$$r \cos(\pi x + \pi/4) + 1$$

$$-r \sin(\pi x) + 1 \rightarrow T = \frac{r\pi}{\pi} = r$$



$$R = [-1, \infty)$$

-V

$$a + b \sin(\pi x) \cos(\pi x) \cos(\pi x) \rightarrow a + b/f \sin(\pi x)$$

-A

$$1/4 \sin(\pi x) \cos(\pi x) = 1/4 \sin(\pi x)$$

$$T = \frac{\pi}{1} \leftarrow \frac{T = \pi/10}{10} \rightarrow \frac{\omega \pi}{10}$$

$$\frac{1/\pi}{f_c} = \frac{\pi/10}{10a} \Rightarrow f_c = 0 \rightarrow c = a/f$$

$$\Rightarrow f_c = 0 \rightarrow c = a/f$$

$$b = 1$$

$$a = +r$$

$$\frac{-A \pi \omega / r}{r} = 0$$

$$a \cos b x + c =$$

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

-9

$$r \cos \pi x + 1 = y \quad r \cos \pi x - 1 = 0 \rightarrow \cos \pi x = 1/r, \quad \sin \pi x = \sqrt{1 - 1/r^2}$$

$$|\tan \pi x| = \left| \frac{\sin \pi x}{\cos \pi x} \right| = \left| \frac{\sqrt{1 - 1/r^2}}{1/r} \right| = \left| \frac{\sqrt{r^2 - 1}}{1} \right| = \sqrt{r^2 - 1}$$

$$P(-r, 0) = P(-r^2 - 1 - 0, 0) = P(1, 0)$$

-1.

