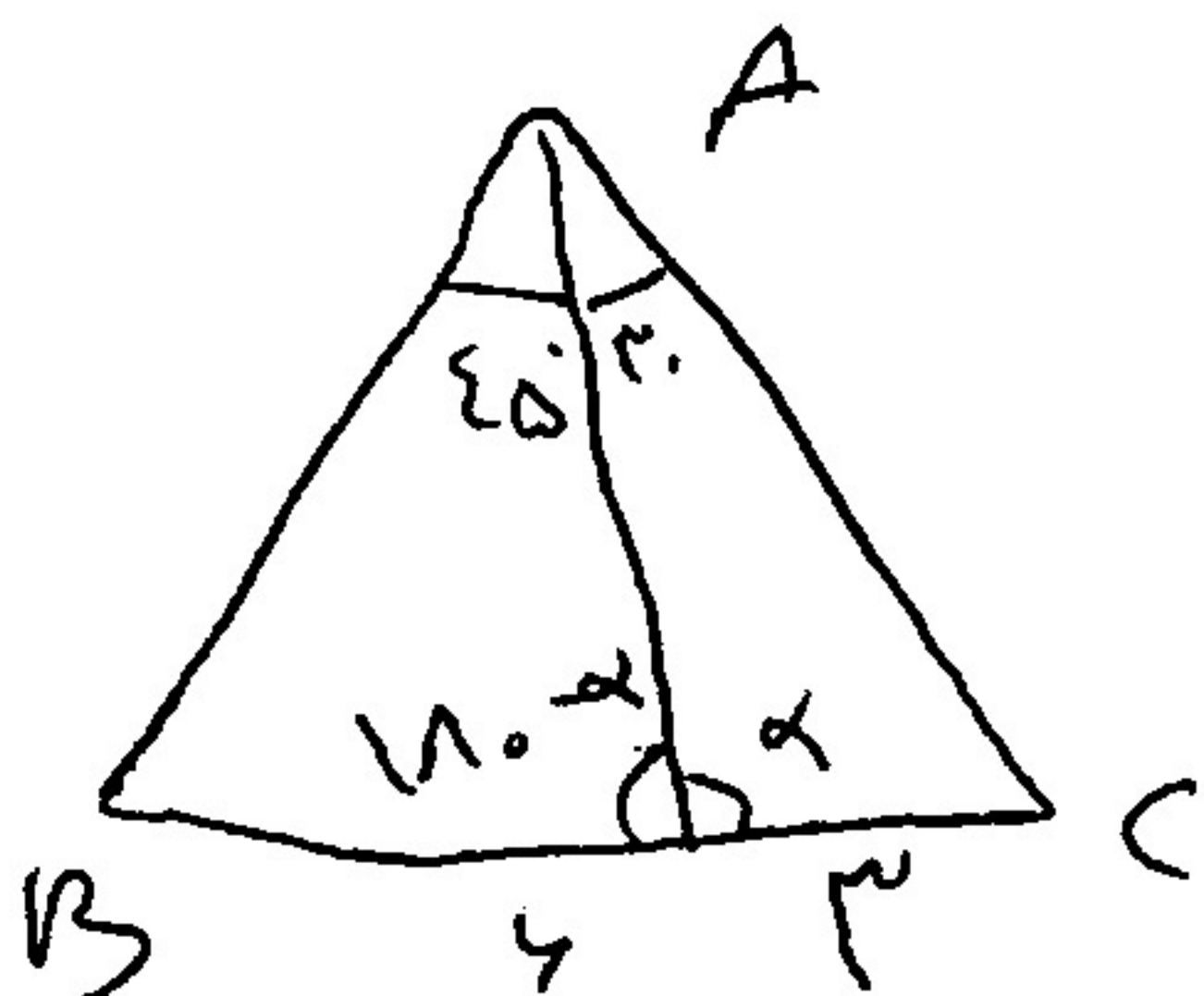


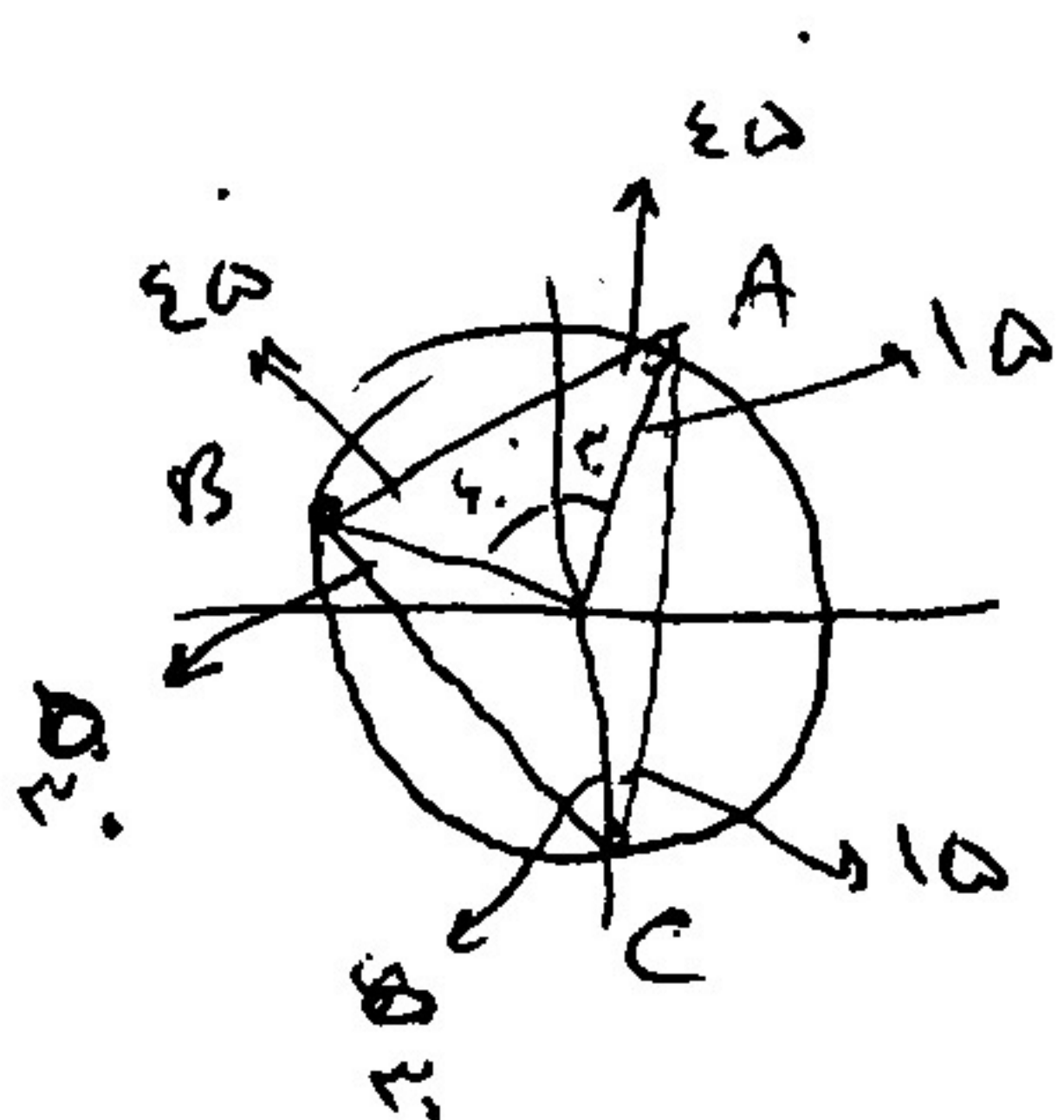
اسم هری (سایه) خور دوازدهم γ_0

$$OBT : OB^r = \tan^r \alpha + 1 \rightarrow OB^r = \cot^r \alpha + 1 = \frac{1}{\sin^r \alpha} \rightarrow \overline{OB} = \frac{1}{\sin \alpha}$$

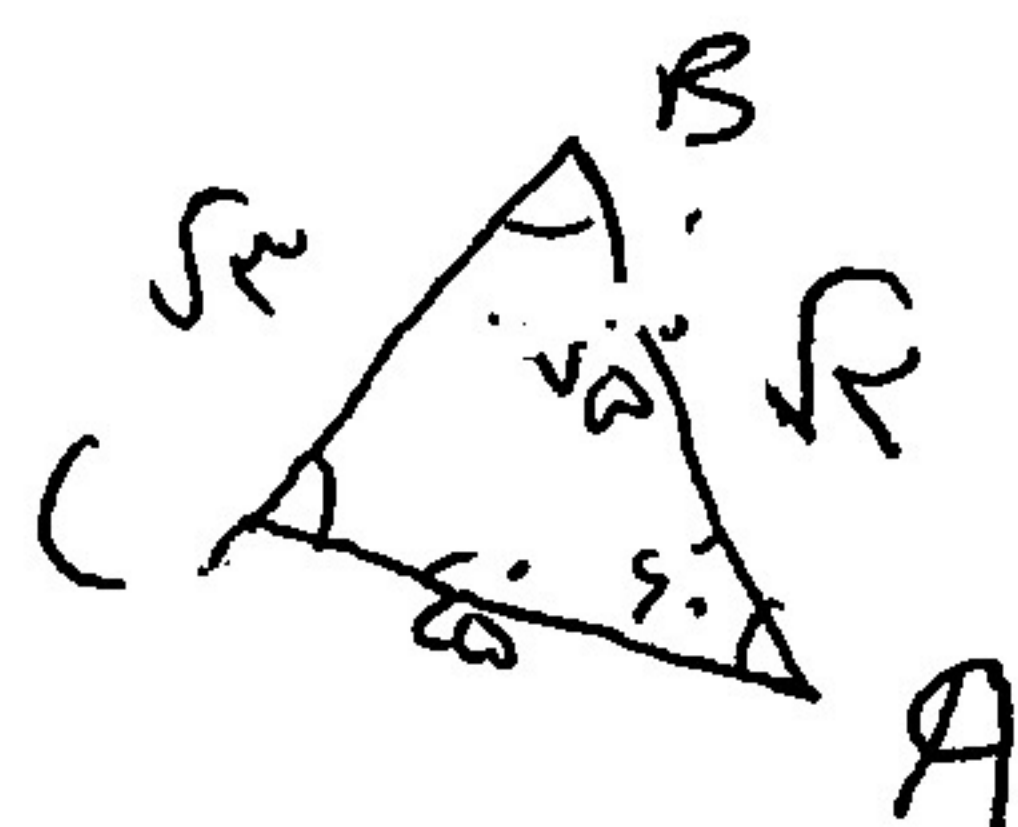
$$AB = \frac{1}{\sin \alpha} - 1 = \frac{\sin \alpha - 1}{\sin \alpha}$$



$$\frac{\sin \epsilon \alpha}{r} = \frac{\sin(\alpha - \alpha)}{AB} \quad \left\{ \begin{array}{l} \frac{\sin \epsilon \alpha}{r} = \frac{\sin \alpha}{AC} \end{array} \right\} \rightarrow \frac{AB}{AC} = \sqrt{r}$$



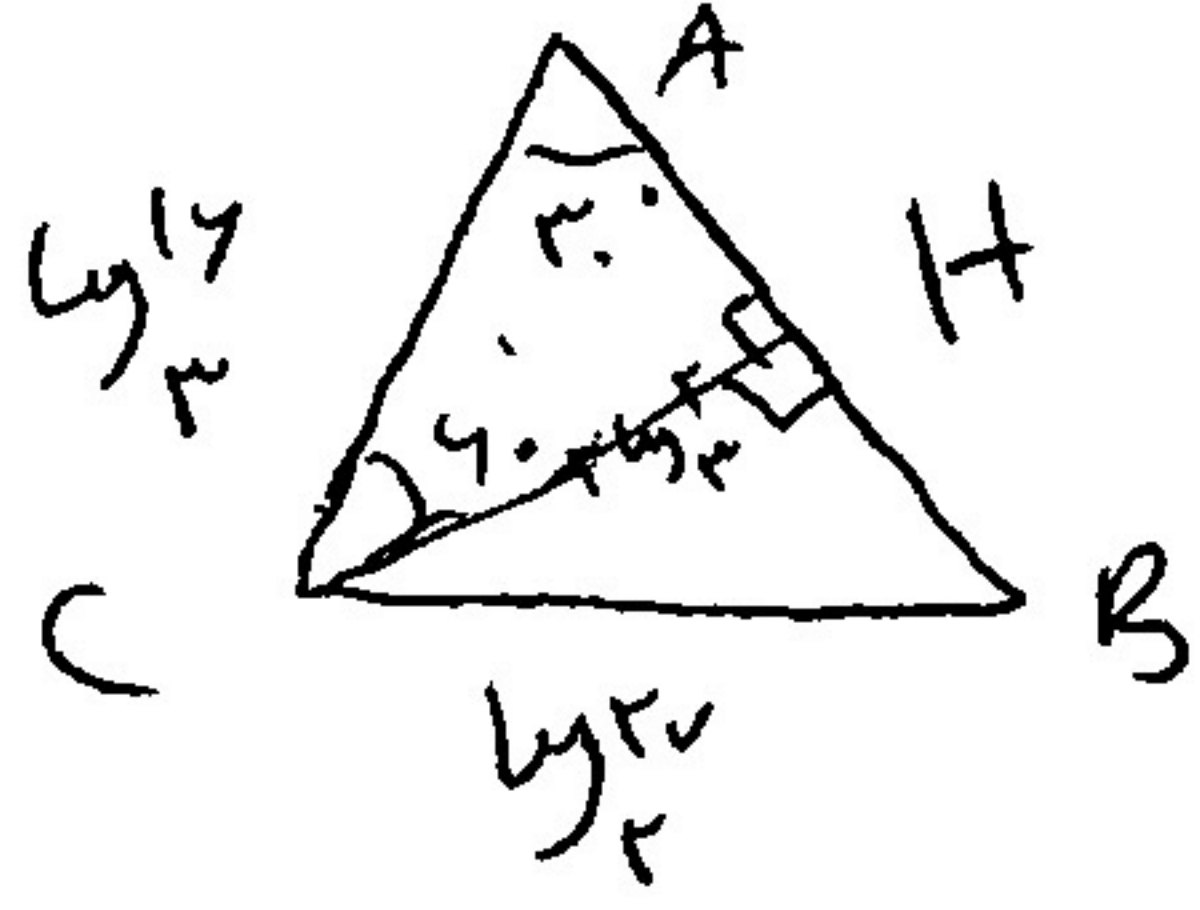
$\triangle ABO \rightarrow$ $\sin 100^\circ = \frac{1}{r}$
 $\cos 40^\circ = \frac{1}{r} \Rightarrow AB = \sqrt{r}$



$$\frac{\sqrt{r}}{\sin \epsilon \alpha} = \frac{BC}{\sin \gamma} = \frac{AC}{\frac{\sin \alpha}{r + \sqrt{r}}}$$

$P_{2,3} = \sqrt{r} + \frac{\sqrt{r} + \sqrt{r}}{r} + \sqrt{r} = \frac{r\sqrt{r} + \sqrt{r} + \sqrt{r}}{r}$

$$S = \frac{r + \sqrt{r}}{\epsilon}$$



$$CH = \frac{\sin \alpha}{r} \times \text{length} = r \text{ length}$$

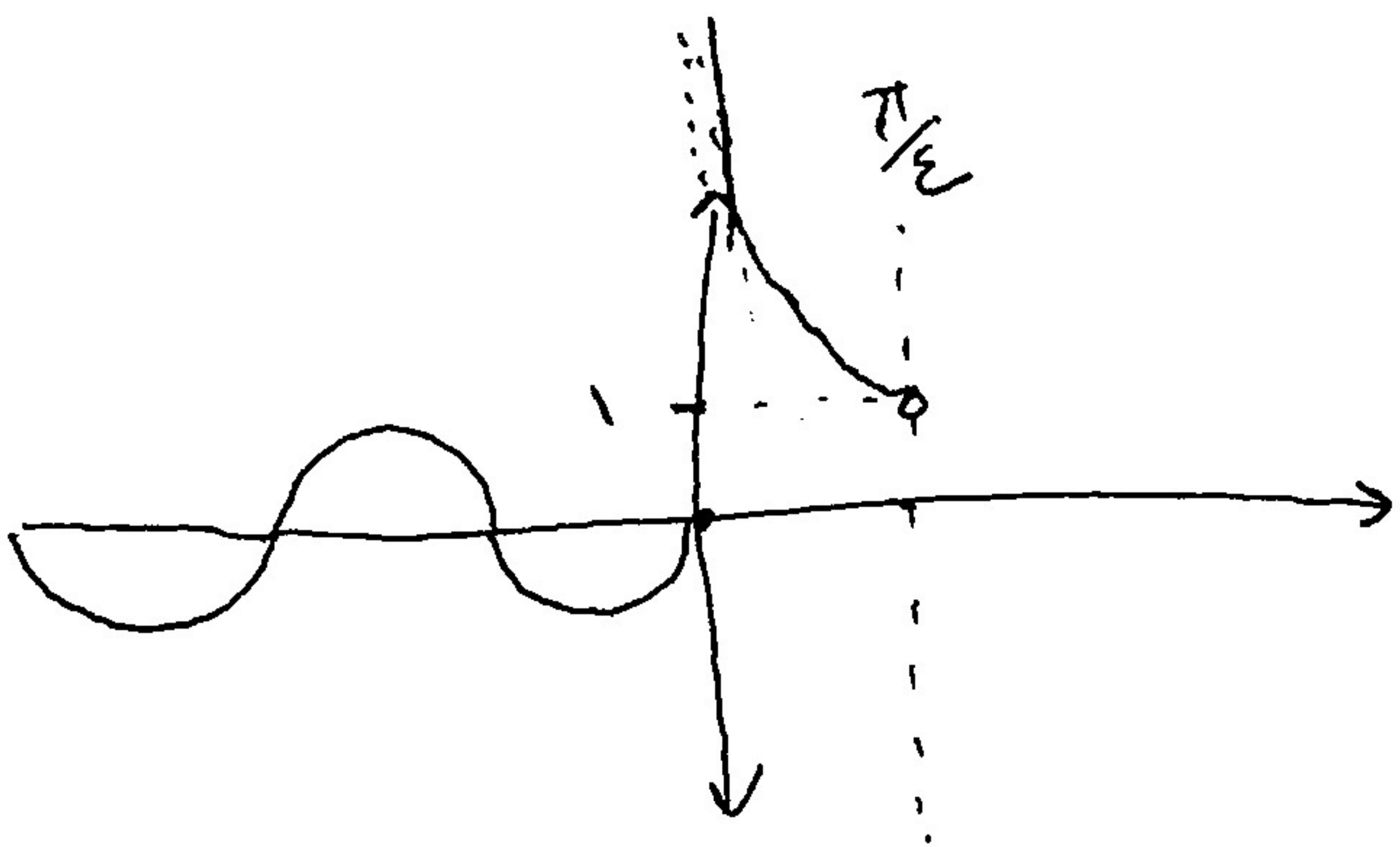
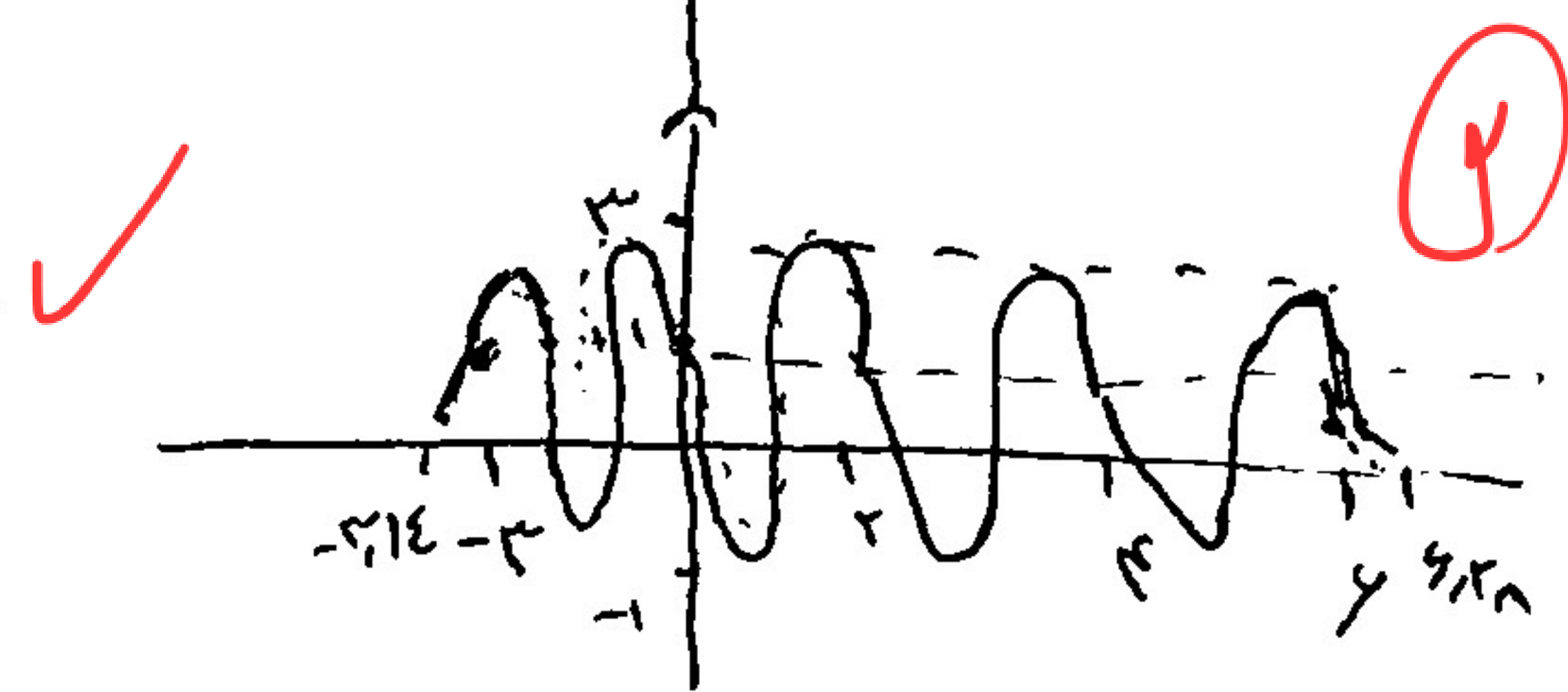
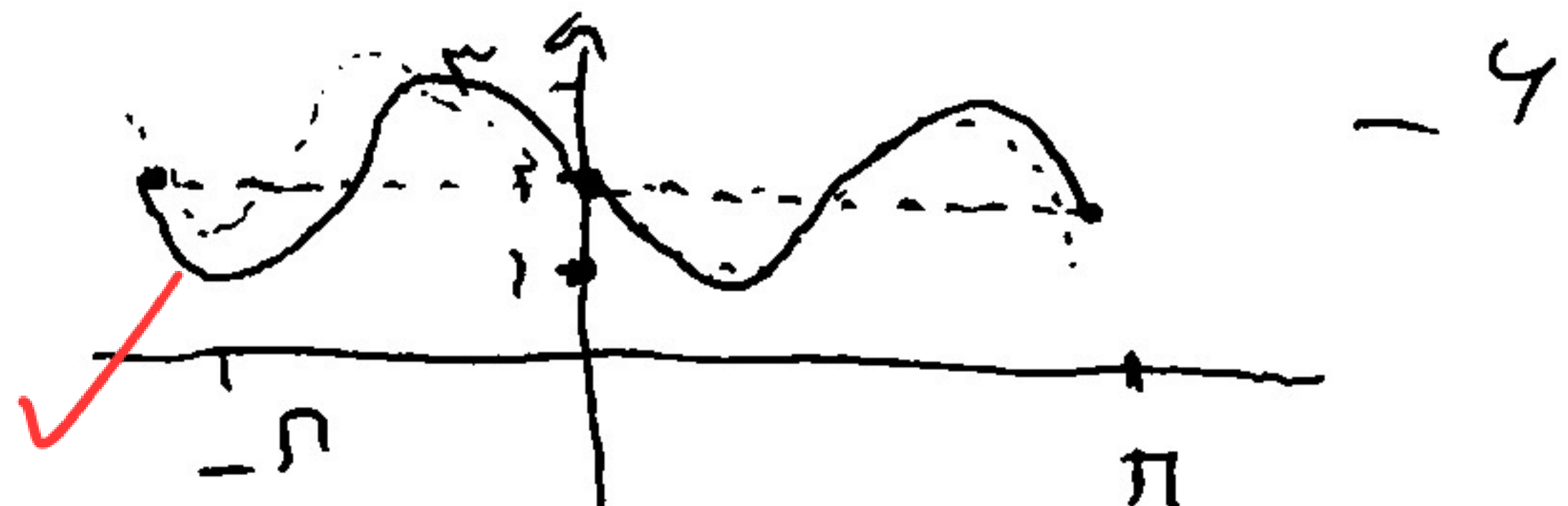
$n = \cos \alpha$
 $r \cos^r \alpha - \sin^r \alpha - \sin^r \alpha (r \sin^r \alpha - 1) = 1$

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

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

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

ب) $-2 \sin \pi n + 1$ $T = \frac{2\pi}{\pi} = 2$
 $[-2, 1], [1, 2]$



$R = [-1, \infty)$

$f(n) = a + b \times \frac{\sin \pi n}{\cos \pi n} = a + \frac{b}{\cos \pi n}$

$\max = 2 \rightarrow |b| + a = 2$
 $\min = 0 \rightarrow -|b| + a = 0 \rightarrow |b| = 1 \rightarrow b = 1$

$T = \frac{2\pi}{\pi} = 2$
 $|c| = \frac{1}{2} \rightarrow c = \frac{1}{2}$

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

$a < 0$
 $\min_{n \geq 0} \rightarrow a = 2$
 $c = -1$
 $T = 2 \rightarrow \frac{2\pi}{\pi} = 2 \rightarrow |b| = 2$



$\cos \pi n - 1 = 0 \rightarrow \cos \pi n = 1 \rightarrow \pi n = 0 \rightarrow n = 0$
 $\rightarrow \cos \pi n = 1 \rightarrow \cos \pi n = 1 \rightarrow \cos \pi n = 1$

$f(-1 - 1/2) = f(-1.5) = f(-1.5) = f(-1.5)$
 $= f(1.5) = \frac{1}{2}$