

$$\lim_{n \rightarrow +\infty} \left[\frac{n-1}{n} \right] + a \left[\frac{n+1}{n} \right] = 1 \times b + a \times 0 = 1 \quad \lim_{n \rightarrow (-1)^-} \left[\frac{n-1}{n} \right] + a \left[\frac{n+1}{n} \right] = 1 \times 1 - a$$

$$\Rightarrow 1 = 1 - a \Rightarrow \boxed{a = 0} \text{ و } \left[\frac{a}{n} \right] = 0$$

$$\lim_{n \rightarrow \left(\frac{\pi}{4}\right)^-} [n \sin n - 1] \rightarrow \lim_{n \rightarrow \left(\frac{\pi}{4}\right)^-} \left[\left(\frac{\pi}{4}\right) - 1 \right] = \boxed{-1}$$

$$\lim_{n \rightarrow \frac{1}{2}} [1/n^2 - n] \rightarrow \lim_{n \rightarrow \left(\frac{1}{2}\right)^+} [1/n^2 - n] = \lim_{n \rightarrow \left(\frac{1}{2}\right)^-} [1/n^2 - n] = -1$$

برابر هستند چون حاصل داخل $\left[\frac{1}{2} \right] = 2$ و عدد صحیح نیست

$$10x - \frac{1}{x} - 5 + \left[\frac{x}{\frac{1}{x}} \right]$$

$$\frac{x}{m^2} \rightarrow \frac{1}{m^2} \rightarrow [12] = 12$$

$$\frac{-10 + 12}{0^-} = \frac{2}{0^-} = \boxed{-\infty}$$

$$14x - \frac{1}{x} - \left[\frac{x}{\frac{1}{x}} \right]$$

$$\frac{-x}{m^2} \rightarrow [-12] = -12$$

نسبت نزولی (در ازای عدد صحیح)

$$\lim_{n \rightarrow 1^+} \frac{\sin^2 \pi n}{1 + \cos^2 \pi n} = \frac{\sin^2 \pi n}{2 \cos^2 \pi n} = \frac{1}{2} \tan^2(\pi n) = 0$$

$$\lim_{n \rightarrow -1} \frac{\sqrt{2n+3} - \sqrt{n+1}}{1 + \sqrt{n}} \times \frac{1}{\sqrt{n}} \times \frac{1}{\sqrt{n}} = \frac{2n+3 - n-1}{1+n} \times \frac{1}{n} = \frac{n+2}{n+1} \times \frac{1}{n} = -\frac{1}{n}$$

$$\lim_{n \rightarrow 1} \frac{2n - \sqrt{n+1} + 5}{2n - \sqrt{n+1}} \times \frac{1}{n} = \frac{2n - \sqrt{n+1} + 5}{2n^2 - n + 1} \xrightarrow{\text{تغییر متغیر}} \lim_{t \rightarrow \sqrt{n}} \frac{2t^2 - \sqrt{t} + 5}{4t^2 - 3t^2 + 1} \quad t = \sqrt{n}$$

$$\frac{2 \times 1 - \sqrt{1+1} + 5}{4 \times 1^2 - 3 \times 1^2 + 1} = \frac{2 - \sqrt{2} + 5}{4 - 3 + 1} = \frac{7 - \sqrt{2}}{2} = \frac{7 - 1.41}{2} = \frac{5.59}{2} = \frac{5.59}{2}$$

سوال ۸ ←

① $a + \sqrt{bm+c} = 0$

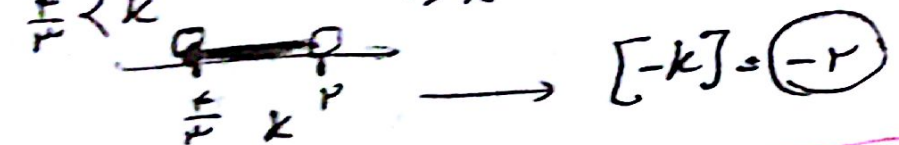
② $\frac{a + \sqrt{bm+c}}{m} = \frac{b}{1 \times \sqrt{bm+c}} = \frac{1}{x} = \frac{1}{r} \rightarrow r b = \sqrt{b+c}$
 مقلوب و خارج
 مقلوب می گیریم
 $r b^r = b+c \rightarrow \boxed{r b^r - b = c}$

باقی بماند: ① $a + \sqrt{b+c} = 0 \rightarrow a + \sqrt{r b^r - b + b} \rightarrow a = -|r b| \rightarrow \frac{a b}{c} = \frac{-r b \times b}{r b^r - b} = \frac{-r b}{r b^r - b}$

$\frac{r + k \left[\frac{m}{\pi} \right]}{\sin m} \rightarrow m \rightarrow r \pi^+ \rightarrow \sin m = 0^- \rightarrow r + k \left[\frac{-r \pi^+}{\pi} \right] < 0$ سوال ۹ ←

$m \rightarrow r \pi^- \rightarrow \sin m = 0^+ \rightarrow r + k \left[\frac{+r \pi^-}{\pi} \right] > 0$

$r + k < 0, r + k > 0$
 $\downarrow$
 $r < -k, r > -k$
 $\frac{r}{r} < k, \frac{r}{r} > k$



$\frac{r + \sqrt{m} - r b}{a m - b} \times \frac{r}{f_{14}} = \frac{b^r (r + \sqrt{m}) - r b}{a m - b} = \frac{b^r \sqrt{m} - r b}{a m - b} \times \frac{r}{14 \times \pi} = \frac{b^r m - 14 b^r}{a m - b}$ سوال ۱۰ ←

$\rightarrow \frac{b^r (b^r - 1)}{a m - b} \xrightarrow[\text{در صورتی که } a=r, b=r]{\text{در صورتی که}} = r b^r = \frac{r \times r}{14 \times 14 \times \pi} = \left(\frac{1}{196} \right)$