

مروری کاظمی یازدهم پسر B

$$\lim_{n \rightarrow 1} \frac{2n^2 - \sqrt{n+2}}{2n^2 - \sqrt{n+2}} \xrightarrow{hop} \frac{2n - \sqrt{2}}{2n - \sqrt{2}} = \frac{1}{2} \quad (2) \quad (1)$$

\downarrow
 $\frac{0^+}{0^+}$ زنجیر

$$\lim_{n \rightarrow \infty} \frac{|2n-1| - |2n+1|}{n} \rightarrow \frac{-2n+1 - (2n+1)}{n} = \frac{-4n}{n} = -4 \quad (2) \quad (2)$$

\downarrow
 $2n-1 < 0$
 $\frac{0^-}{0^+}$ زنجیر

$$\lim_{n \rightarrow 4} \frac{n-4}{\sqrt{n}-2} \rightarrow \frac{(\sqrt{n}-2)(\sqrt{n}+2)}{(\sqrt{n}-2)} = 4 \quad (2) \quad (3)$$

$\frac{0^-}{0^+}$ زنجیر

$$\lim_{n \rightarrow \infty} \frac{n - \sqrt{2n}}{2n^2 - n - 4} \xrightarrow{hop} 1 - \frac{1}{\sqrt{2n}} \rightarrow 1 - \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} \quad (2) \quad (4)$$

$$\lim_{n \rightarrow 1} \frac{1 - \sqrt{n}}{2 - \sqrt{2} - n} \xrightarrow{hop} \frac{1 + (\frac{1}{\sqrt{2n}})}{2 + (\frac{1-1}{2\sqrt{2n}})} = \frac{1}{2} = \frac{1}{2} \quad (2) \quad (5)$$

$$\lim_{n \rightarrow 4} \frac{\sqrt{2n+4} - 4}{\sqrt{2n+2} - 2} \xrightarrow{hop} \frac{2n+4-16}{2n+2-2\sqrt{2}} \times \frac{2\sqrt{2}}{2\sqrt{2}} = \frac{2n-12}{2n-2} \times \frac{2\sqrt{2}}{2\sqrt{2}} = \frac{2(n-6)}{2(n-1)} = \frac{2}{3}$$

$\Rightarrow \frac{2(n-6)}{2(n-1)} \approx \frac{2\sqrt{2}}{2\sqrt{2}} = \frac{2\sqrt{2}}{2\sqrt{2}}$

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مدرسه کاتولیک بوسریه

$$\lim_{n \rightarrow 1} \frac{\sqrt{n+1} + \sqrt{n} - 2}{\sqrt[n]{n} - 1}$$

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

$$\rightarrow \frac{\sqrt{n+1} + \sqrt{n} - 2}{n-1} \times \frac{n}{n} \rightarrow \left(1 + \frac{\sqrt{n}-1}{n-1}\right) \times \frac{n}{n} \rightarrow \left(1 + \frac{\sqrt{n}-1}{(\sqrt{n}-1)(\sqrt{n}+1)}\right) \times \frac{n}{n}$$

$$\left(\frac{21}{2}\right)$$

$$\lim_{n \rightarrow \pi} \frac{1 + \cos^n n}{\sin^n n} \xrightarrow{\text{hop}} \frac{(1 + \cos n)(1 - \cos n + \cos^2 n)}{1 - \cos^n n}$$

$$= \frac{(1 + \cos n)(1 - \cos n + \cos^2 n)}{(1 - \cos n)(1 + \cos n)}$$

$$\rightarrow \frac{1 - (-1) + (-1)^2}{1 - (-1)} = \frac{3}{2}$$

$$\lim_{n \rightarrow \frac{\pi}{2}} \frac{1 - \tan^n n}{\sin n - \cos n}$$

$$\xrightarrow{\text{hop}} \frac{-(1 + \tan^n n)}{\cos n + \sin n} = \frac{-(2)}{\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}} = -\sqrt{2}$$

$$-\sqrt{2}$$

$$\lim_{n \rightarrow \frac{\pi}{2}} \frac{\tan^n n - 1}{\cos^n n} \xrightarrow{\text{hop}} \frac{n \tan n (1 + \tan^n n)}{-(n \sin^n n)} = \frac{n \times 1 (1+1)}{-(1-1)} = -2$$

$$n \rightarrow \frac{\pi}{2}$$