

تاریخ صحیح 50

1 $\lim_{n \rightarrow 1} \frac{2n^2 - 7n + 5}{5n^2 - 4n + 3} \Rightarrow \frac{(2n-5)(n-1)}{(n-1)(5n-3)} = \frac{1}{4}$

2 $\lim_{n \rightarrow 0} \frac{|2n-1| - |2n+1|}{2} \Rightarrow \frac{-2n+1-2n-1}{2} = -2$

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

4 $\lim_{n \rightarrow 2} \frac{n - \sqrt{5n}}{n^2 - n - 5} = \frac{n - \sqrt{5n}}{(n-5)(n+5)} = \frac{\sqrt{n}(\sqrt{n} - \sqrt{5})}{(\sqrt{n}+5)(\sqrt{n}-5)}$

$\frac{\sqrt{x}}{x^2 + x - 5} = \frac{1}{x\sqrt{x} + \sqrt{x} - 5}$

تجزیه فرادج

5 $\lim_{n \rightarrow 1} \frac{1 - \sqrt{n}}{1 - \sqrt{5-n}} \Rightarrow \frac{1 + \sqrt{n}}{1 + \sqrt{n}} \Rightarrow \frac{1 + \sqrt{5-n}}{1 + \sqrt{5-n}}$

$\Rightarrow \frac{(1-n) \cdot 1}{1(-1+5)} = -2$ $\frac{0}{0}$ (No)

تجزیه فرادج $\frac{1}{1+\sqrt{n}}$ $\frac{1-\sqrt{n}}{1-\sqrt{n}}$

Q) $\lim_{n \rightarrow \infty} \frac{\sqrt{n+2} - 2}{\sqrt{n+2} - 1} \times \frac{\sqrt{n+2} + 2}{\sqrt{n+2} + 2}$

$\Rightarrow \frac{(n-4)}{n-1} \times \frac{1}{1}$

$\Rightarrow \frac{n-4}{n-1} \times \frac{1}{1}$

$\Rightarrow \frac{1}{1}$

$\sqrt{n+2} - 2, \sqrt{n+2} + 2 \Rightarrow \frac{1}{0} \Rightarrow \infty$

Q) ~~lim~~ $\lim_{n \rightarrow 1} \frac{\sqrt{n+2} - 1}{\sqrt{2} - 1} \times \frac{\sqrt{n+2} + 1}{\sqrt{n+2} + 1}$

$\Rightarrow \frac{n+2-1}{n-1} \times \frac{1}{1}$

$\Rightarrow \frac{(n+1)(n+3)}{(n-1)(n+1)} \times \frac{1}{1}$

$\Rightarrow \frac{n+3}{n-1} \times \frac{1}{1}$


$\Rightarrow \frac{4}{0} \Rightarrow \infty$

$\Rightarrow \frac{(\sqrt{n+1})(n+3)}{(\sqrt{n+1})(n-1)} \times \frac{1}{1}$

$\Rightarrow \frac{n+3}{n-1}$

$$\text{a) } \frac{\sin n}{1 + \cos n} \rightarrow \frac{1 + \cos n}{1 - \cos n}$$

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



$$\text{b) } \frac{\cos n}{1 - \tan n} \Rightarrow \frac{1 - \frac{\sin n}{\cos n}}{\sin n - \cos n} = \frac{\frac{\cos n - \sin n}{\cos n}}{\sin n - \cos n} = \frac{1}{1}$$

$$\frac{-1}{\cos n} = -\sec$$

$$\text{c) } \frac{\sin n}{\cos n} = \tan n$$

$$\frac{\tan n - 1}{\cos n} \Rightarrow \frac{\frac{\sin n - \cos n}{\cos n}}{\cos n - \sin n} = 1$$

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

$$\frac{(\sin n - \cos n)(\sin n + \cos n)}{\cos n} \Rightarrow \frac{1}{\cos n} = \sec n$$

$$\frac{(\cos n - \sin n)(\cos n + \sin n)}{\cos n} \Rightarrow \frac{1}{\cos n} = \sec n$$