



$$\lim_{n \rightarrow 1} \frac{\sum n^2 - Vn + P}{\Delta n^2 - \Delta n + P}$$

(1)

$$\lim_{n \rightarrow 1} \frac{(n-1)(\sum n - P)}{(n-1)(\Delta n - P)} = \frac{\sum n - P}{\Delta n - P} = \frac{\sum - P}{\Delta - P} = \frac{1}{2}$$

$$\lim_{x \rightarrow 0} \frac{|2x-1| - |2x+1|}{x}$$

(2)

$$\lim_{x \rightarrow 0} \frac{(-2x+1) - (2x+1)}{x} = \lim_{x \rightarrow 0} \frac{-4x}{x} = \lim_{x \rightarrow 0} -4 = -4$$

$$\lim_{x \rightarrow 2} \frac{x-2}{\sqrt{x}-2} = \lim_{x \rightarrow 2} \frac{(\sqrt{x}-2)(\sqrt{x}+2)}{\sqrt{x}-2}$$

(3)

$$\lim_{x \rightarrow 2} \sqrt{x} + 2 = 4$$

$$\lim_{x \rightarrow 2} \frac{x - \sqrt{2x}}{2x^2 - x - 4}$$

(4)

11 September Wednesday

21 جمادى الثانیة شهر ربيع

الأربعاء ربيع الأول ٧

$$\lim_{x \rightarrow 2} \frac{x - \sqrt{2x}}{2x^2 - x - 4} \times \frac{x + \sqrt{2x}}{x + \sqrt{2x}} =$$

$$\frac{x^2 - 2x}{(2x^2 - x - 4)(x + \sqrt{2x})} = \frac{x(x-2)}{(x-2)(2x+3)(x + \sqrt{2x})}$$



$$\lim_{x \rightarrow 2} \frac{x}{(2x+1)(x+\sqrt{x})} = \frac{2}{2 \cdot 1} = \frac{1}{1}$$

$$\lim_{x \rightarrow 1} \frac{1-\sqrt{x}}{2-\sqrt{5-x}} \times \frac{1+\sqrt{x}}{1+\sqrt{x}} \times \frac{2+\sqrt{5-x}}{2+\sqrt{5-x}}$$

$$= \lim_{x \rightarrow 1} \frac{(1-x)(2+\sqrt{5-x})}{(5-(5-x))(1+\sqrt{x})} = \lim_{x \rightarrow 1} \frac{(1-x)(2+\sqrt{5-x})}{(x-1)(1+\sqrt{x})}$$

$$\lim_{x \rightarrow 1} \frac{-(2+\sqrt{5-x})}{1+\sqrt{x}} = \frac{-(2+\sqrt{5})}{1+1} = -2$$

$$\lim_{x \rightarrow 5} \frac{\sqrt{3x+5} - 5}{\sqrt{5x+7} - 3}$$

ب ضرب مزدوج
یا قاعده هسپتال

$$\lim_{x \rightarrow 5} \frac{3}{2\sqrt{3x+5}} = \frac{3}{2 \cdot 5} = \frac{3}{10}$$

$$\lim_{x \rightarrow 1} \frac{3 + \frac{1}{2\sqrt{x}}}{2\sqrt{3x+7} + \sqrt{x}} = \frac{3 + \frac{1}{2}}{2\sqrt{10} + 1} = \frac{7}{2\sqrt{10} + 1}$$

شهادت حضرت امام حسن عسکری علیه السلام (۲۶۰ هـ ق) و آغاز امامت حضرت ولیعصر (عجل الله تعالی فرجه) (تعطیل)

Thursday September 12

پنجشنبه شهریور

۲۲

ربیع الاول الخمیس

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$$\lim_{x \rightarrow \pi} \frac{1 + \cos^x}{\sin^x}$$

$$\lim_{x \rightarrow \pi} \frac{(1 + \cos)(1 - \cos + \cos^x)}{(1 - \cos)(1 + \cos)} =$$

$$\lim_{x \rightarrow \pi} \frac{1 - \cos + \cos^x}{1 - \cos} = \frac{1 - (-1) + (-1)^x}{1 - (-1)} = \frac{2}{2} = 1$$

$$\lim_{x \rightarrow \frac{\pi}{2}} \frac{1 - \tan}{\sin - \cos} \rightarrow \lim_{x \rightarrow \frac{\pi}{2}} \frac{\cos - \sin}{\sin - \cos} = 1$$

$$\lim_{x \rightarrow \frac{\pi}{2}} \frac{-(\sin - \cos)}{\cos(\sin - \cos)} = \frac{-1}{\cos} = \frac{-1}{\frac{\sqrt{2}}{2}} = -\sqrt{2}$$

$$\lim_{x \rightarrow \frac{3\pi}{2}} \frac{\tan^2 - 1}{\cos^2 x} = \lim_{x \rightarrow \frac{3\pi}{2}} \frac{\sin^2 - \cos^2}{\cos^2 - \sin^2} = 1$$

$$\lim_{x \rightarrow \frac{3\pi}{2}} \frac{-(\cos^2 - \sin^2)}{\cos^2(\cos^2 - \sin^2)} = \frac{-1}{\cos^2} = \frac{-1}{\left(-\frac{\sqrt{2}}{2}\right)^2} = -2$$

13 September Friday

٢٣ شهر يور جمعه

الجمعه ربيع الاول ٠٩

Sobhan Raisi

