

"بناؤا"

20

بازدم افند

سایت خلیار

$$\lim_{x \rightarrow 1} \frac{x^2 - 4x + 3}{x^2 - 1} = \frac{0}{0} \xrightarrow{\text{Hop}} \frac{2x - 4}{2x - 2} = \frac{1}{2}$$

$$\frac{x^2 - 4x + 3}{x^2 - 1} = \frac{(x-1)(x-3)}{(x-1)(x+1)} = \frac{x-3}{x+1}$$

روش 2

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

$$\lim_{x \rightarrow 0} \frac{|3x-1| - |3x+1|}{x} = \frac{0}{0} \xrightarrow{\text{Hop}} \frac{-4}{1} = -4$$

$$\lim_{x \rightarrow 4} \frac{x-4}{\sqrt{x}-2} = \frac{0}{0} \xrightarrow{\text{Hopital}} \frac{1}{\frac{1}{2\sqrt{x}}} = 2$$

$$\lim_{x \rightarrow 2} \frac{x - \sqrt{2x}}{x^2 - 2} = \frac{0}{0} \xrightarrow{\text{Hopital}} \frac{1 - \frac{1}{\sqrt{2x}}}{2x} = \frac{1}{2\sqrt{2}}$$

$$\lim_{x \rightarrow 1} \frac{1 - \sqrt{x}}{x - \sqrt{x}} = \frac{0}{0} \xrightarrow{\text{Hopital}} \frac{-\frac{1}{2\sqrt{x}}}{1 - \frac{1}{2\sqrt{x}}} = -1$$

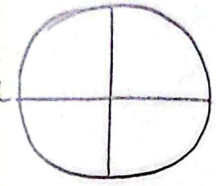
$$\lim_{x \rightarrow 4} \frac{\sqrt{3x+4} - 5}{\sqrt{5x+4} - 3} = \frac{0}{0} \xrightarrow{\text{Hopital}} \frac{\frac{3}{2\sqrt{3x+4}}}{\frac{5}{2\sqrt{5x+4}}} = \frac{3\sqrt{5x+4}}{5\sqrt{3x+4}} = \frac{11}{10}$$

$$\lim_{x \rightarrow 1} \frac{\sqrt{3x+\sqrt{x}} - 2}{\sqrt{x} - 1} = \frac{0}{0} \xrightarrow{\text{Hopital}} \frac{\frac{3}{2\sqrt{3x+\sqrt{x}}} + \frac{1}{4\sqrt{x}}}{\frac{1}{2\sqrt{x}}} = \frac{3\sqrt{x} + \sqrt{x}}{2} = 2$$

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

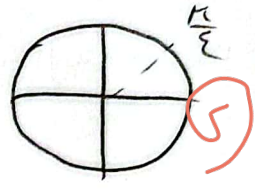
①

⑤



$$\lim_{x \rightarrow \frac{\pi}{2}} \frac{1 - \tan x}{\sin x - \cos x} = \frac{0}{0} \rightarrow \frac{1 - \frac{1}{\cancel{c}}}{\cancel{s}} = -\frac{1}{\cos x} = -\frac{\pi}{\sqrt{\pi}}$$

④



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

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

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