

$$\lim_{x \rightarrow 1} \frac{5x^2 - 7x + 3}{5x^2 - 12x + 3} \rightarrow \frac{0}{0} \xrightarrow{\text{باینجا}} \frac{5(x-1)(x-\frac{3}{5})}{5(x-1)(x-\frac{3}{5})} = \frac{5}{5} \times \frac{\frac{5}{5}}{\frac{5}{5}} = \frac{1}{1} \quad (1)$$

$$\lim_{x \rightarrow 0} \frac{|3x-11| - |3x+1|}{x} \rightarrow \frac{0}{0} \xrightarrow{\text{باینجا}} \frac{-3x-1-3x+1}{x} = \frac{-6x}{x} = -6 \quad (2)$$

$$\lim_{x \rightarrow 4} \frac{x-4}{\sqrt{x}-2} \rightarrow \frac{0}{0} \xrightarrow{\text{باینجا}} \frac{(\sqrt{x}-2)(\sqrt{x}+2)}{\sqrt{x}-2} = 4 \quad (3)$$

$$\lim_{x \rightarrow 1} \frac{x - \sqrt{x}}{x^2 - x - 2} \rightarrow \frac{0}{0} \xrightarrow{\text{باینجا}} \frac{1 - \frac{1}{\sqrt{x}}}{4x - 1} = \frac{1}{3} = \frac{1}{1/3} \quad (4)$$

$$\lim_{x \rightarrow 1} \frac{1 - \sqrt{x}}{12 - \sqrt{5}x} \rightarrow \frac{0}{0} \xrightarrow{\text{باینجا}} \frac{-\frac{1}{2\sqrt{x}}}{-1} = -\frac{1}{\frac{1}{2}} = -2 \quad (5)$$

$$\lim_{x \rightarrow 4} \frac{\sqrt{3x+5} - 4}{\sqrt{5x+7} - 3} \rightarrow \frac{0}{0} \xrightarrow{\text{باینجا}} \frac{\sqrt{3x+5} - 4}{\sqrt{5x+7} - 3} \times \frac{\sqrt{3x+5} + 4}{\sqrt{3x+5} + 4} \times \frac{\sqrt{5x+7} + 3}{\sqrt{5x+7} + 3} \xrightarrow{\text{HOP}}$$

$$\frac{3}{5} \times \frac{3b^2}{2a} = \frac{3}{5} \times \frac{27}{12} = \frac{27}{10} \quad (6)$$

$$\lim_{x \rightarrow 1} \frac{\sqrt{3x+5} - 4}{\sqrt{x} - 1} \rightarrow \frac{0}{0} \xrightarrow{\text{باینجا}} \frac{\sqrt{3x+5} - 4}{\sqrt{x} - 1} \times \frac{\sqrt{3x+5} + 4}{\sqrt{3x+5} + 4} \times \frac{\sqrt{x} + 1}{\sqrt{x} + 1} \xrightarrow{\text{meow}}$$

$$\frac{3x+5 - 16}{x-1} \times \frac{3}{3} = \frac{3x-11}{x-1} \times \frac{3}{3} = (3 + \frac{1}{x-1}) \times \frac{3}{3} = \frac{27}{1} \quad (7)$$

$$\lim_{x \rightarrow \pi} \frac{1 + \cos x}{\sin x} \rightarrow \frac{0}{0} \xrightarrow{\text{باینجا}} \frac{(1 + \cos x)(1 - \cos x + \cos^2 x)}{1 - \cos^2 x} = \frac{1 + \cos x}{1 + \cos x} = \frac{1}{1} \quad (8)$$

$$\lim_{x \rightarrow \frac{\pi}{2}} \frac{1 - \tan x}{\sin x - \cos x} \rightarrow \frac{0}{0} \xrightarrow{\text{باینجا}} \frac{\frac{\cos x}{\sin x} - \frac{\sin x}{\cos x}}{\sin x - \cos x} = \frac{-1}{\sin x - \cos x} = \frac{-1}{-1} = 1 \quad (9)$$

$$\lim_{x \rightarrow \frac{3\pi}{2}} \frac{\tan x - 1}{\cos x} \rightarrow \frac{0}{0} \xrightarrow{\text{باینجا}} \frac{\frac{\sin x}{\cos x} - \frac{\cos x}{\sin x}}{\cos x - \sin x} = \frac{-1}{-1} = 1 \quad (10)$$