

Vypočítajte limity:

$$28.) \lim_{x \rightarrow 2} \left(\frac{x^2 + x - 1}{2x^2 - x + 1} \right)^3 \quad 29.) \lim_{x \rightarrow 5} \left(\frac{5x^2 - x}{x^2 - 3} - \frac{3x^3 - 4}{x^3 - x} \right)^4 \quad 30.) \lim_{x \rightarrow 1} \log \frac{x^2 + x + 3}{x^2 - 2}$$

Riešenie:

$$28.) \lim_{x \rightarrow 2} \left(\frac{x^2 + x - 1}{2x^2 - x + 1} \right)^3 = \lim_{x \rightarrow 2} \left(\frac{1 + \frac{1}{x} - \frac{1}{x^2}}{2 - \frac{1}{x} + \frac{1}{x^2}} \right)^3 = \left(\frac{1 + 0 - 0}{2 - 0 + 0} \right)^3 = \left(\frac{1}{2} \right)^3 = \frac{1}{8}$$

$$29.) \lim_{x \rightarrow 5} \left(\frac{5x^2 - x}{x^2 - 3} - \frac{3x^3 - 4}{x^3 - x} \right)^4 = \lim_{x \rightarrow 5} \left(\frac{5 - \frac{1}{x}}{1 - \frac{3}{x^2}} - \frac{3 - \frac{4}{x^3}}{1 - \frac{1}{x^2}} \right)^4 = \left(\frac{5 - 0}{1 - 0} - \frac{3 - 0}{1 - 0} \right)^4 = (5 - 3)^4 = 2^4 = 16$$

$$30.) \lim_{x \rightarrow 1} \log \frac{x^2 + x + 3}{x^2 - 2} = \lim_{x \rightarrow 1} \log \frac{1 + \frac{1}{x} + \frac{3}{x^2}}{1 - \frac{2}{x^2}} = \log \frac{1 + 0 + 0}{1 - 0} = \log 1 = 0$$