

N 5.272

$$\lim_{x \rightarrow 0} \frac{x^2 - 2}{3x^2 - 5x + 1} = \frac{0 - 2}{0 - 0 + 1} = \frac{-2}{1} = -2$$

N 5.274

$$\lim_{x \rightarrow -3} \frac{x}{x+3} = \frac{-3}{-3+3} = \frac{-3}{0} = \infty$$

N 5.276

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

$$= \frac{1}{2-2} - \frac{3}{8-2^3} = \frac{1}{0} - \frac{3}{0} = \infty - \infty$$

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

$$= \frac{1 \cdot (2^2+2x+x^2) - 3}{(2-x)(2^2+2x+x^2)} = \frac{4+2x+x^2-3}{8-x^3} =$$

$$= \lim_{x \rightarrow 0} \frac{x^2+2x+1}{8-x^3} = \frac{0^2+2 \cdot 0+1}{8-0^3} = \frac{1}{8}$$

Ответ:  $\frac{1}{8}$

N 5.278 - ?

$$\lim_{x \rightarrow 1} \frac{x^m - 1}{x^n - 1}, m, n \in \mathbb{N} = \lim_{x \rightarrow 1} \frac{1^m - 1}{1^n - 1} = \frac{0}{0}$$

= 0      Ответ: 0