

Határértékek Munkafüve II.

$$(6) \lim_{x \rightarrow \infty} \frac{5x^3 + x^2 + 4x}{7x^2 + 2} = \lim_{x \rightarrow \infty} \frac{x^3(5 + \frac{1}{x} + \frac{4}{x^2})}{x^2(7 + \frac{2}{x^2})} =$$

$$\lim_{x \rightarrow \infty} \frac{x(5 + \frac{1}{x} + \frac{4}{x^2})}{7 + \frac{2}{x^2}} = +\infty$$

$\begin{matrix} \infty & 1 & 0 & 0 \\ 5 & 1 & 0 & 4 \\ 7 & & 2 & \end{matrix}$

(7) $\lim_{x \rightarrow \infty} \frac{x^2 - 5x + 6}{x^2 - 6x + 8}$ nincs határértéke

$$(8) \lim_{x \rightarrow \infty} (x^2 - 5x + 2) = \lim_{x \rightarrow \infty} x^2(1 - \frac{5}{x} + \frac{2}{x^2}) = +\infty$$

$\begin{matrix} 1 & 1 & 0 & 0 \\ +\infty & 1 & 0 & 0 \end{matrix}$

$$(9) \lim_{x \rightarrow -\infty} (x^2 - 5x + 2) = \lim_{x \rightarrow -\infty} (x^2 \cdot (1 - \frac{5}{x} + \frac{2}{x^2})) = +\infty$$

$$(10) \lim_{x \rightarrow \infty} (2x^3 - 3x^2 + 6x + 2) = \lim_{x \rightarrow \infty} x^3(2 - \frac{3}{x} + \frac{6}{x^2} + \frac{2}{x^3}) = +\infty$$

$\begin{matrix} 1 & 1 & 0 & 0 & 0 \\ +\infty & 2 & 0 & 0 & 0 \end{matrix}$

$$(12) \lim_{x \rightarrow 2} \frac{x^2 - 8x + 12}{2x^2 - 8} = \lim_{x \rightarrow 2} \frac{\cancel{x-2}(x-6)}{2\cancel{(x-2)}(x+2)} = \lim_{x \rightarrow 2} \frac{x-6}{2x+4} =$$

$$= \frac{2-6}{2 \cdot 2 + 4} = \frac{-4}{8} = -\frac{1}{2}$$