

Twierdzenia arytmetyki

$$\lim_{x \rightarrow 2} \frac{x^3 + 8}{x + 2}$$

$$\lim_{x \rightarrow 1} \frac{x^3 - 1}{x^4 - 1}$$

$$\lim_{x \rightarrow -2} \frac{3x^2 + 5x - 2}{4x^2 + 9x + 2}$$

$$\lim_{x \rightarrow \infty} \frac{\sqrt{1+x} + 2}{\sqrt{1+x^2}}$$

$$\lim_{x \rightarrow 0} \frac{\sin^2 x}{1 - \cos x}$$

$$\lim_{x \rightarrow 2} \frac{x^3 - 8}{x - 2}$$

$$\lim_{x \rightarrow 3} \frac{x^2 - 4x + 3}{2x - 6}$$

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

$$\lim_{x \rightarrow 0} \frac{\sqrt{1+x} - \sqrt{1-x}}{2x}$$

$$\lim_{x \rightarrow 0} \frac{36^x - 16^x}{6^x - 4^x}$$

Podstawowe wyrażenia nieoznaczone

$$\lim_{x \rightarrow 0} \frac{6x}{\sin 3x}$$

$$\lim_{x \rightarrow 0} \frac{\sin^3 3x}{x^3}$$

$$\lim_{x \rightarrow -\infty} \frac{\ln(1 - 2^x)}{4^x}$$

$$\lim_{x \rightarrow 0} \frac{3^{2x} - 1}{6^x - 1}$$

$$\lim_{x \rightarrow \frac{1}{2}} \frac{\arcsin(1 - 2x)}{4x^2 - 1}$$

$$\lim_{x \rightarrow 0} [1 + \operatorname{tg} 3x]^{\operatorname{ctg} 6x}$$

$$\lim_{x \rightarrow 0} \frac{\sin 3x}{\sin 6x}$$

$$\lim_{x \rightarrow 0} \frac{\ln(1 + 3x^2)}{6x^2}$$

$$\lim_{x \rightarrow 0} \frac{e^{3x} - 1}{\sin 3x}$$

$$\lim_{x \rightarrow 0} \frac{\operatorname{tg} 3x}{e^{\operatorname{tg} 2x} - 1}$$

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

Asymptoty

$$f(x) = \frac{x}{1-x}$$

$$f(x) = \frac{x-2}{\sqrt{x^2-4}}$$

$$f(x) = \frac{x^3 + x^2}{x^2 - 9}$$

$$f(x) = \frac{\sin x}{x^2}$$

$$f(x) = \frac{1}{e^x - 1}$$

Ciągłość funkcji

$$f(x) = \begin{cases} \frac{\sin x}{\cos x}; & \text{dla } x < 0 \\ x + b; & \text{dla } x \geq 0 \end{cases}$$

$$f(x) = \begin{cases} x; & \text{dla } |x| \leq 1 \\ x^2 + ax + b; & \text{dla } |x| > 1 \end{cases}$$

$$f(x) = \begin{cases} (x-2)^3; & \text{dla } x \leq 0 \\ ax + b; & \text{dla } 0 < x < 2 \\ \sqrt{2x}; & \text{dla } x \geq 2 \end{cases}$$