

Determina i seguenti limiti

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

$$\lim_{x \rightarrow 2} \frac{x^3 + 2x - 12}{7x^2 - 6x - 16}$$

$$\lim_{x \rightarrow 3} \frac{\sqrt{x} - \sqrt{3}}{(x^3 - 27)^2}$$

$$\lim_{x \rightarrow 2} \frac{x^4 + 2x - 20}{\sqrt{3x + 10} - 2x}$$

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

$$\lim_{x \rightarrow \infty} \frac{3x + \sqrt{4x + 1}}{5x - \sqrt{2x + 3}}$$

$$\lim_{x \rightarrow 1} \frac{1 - x^6}{x^4 - 1}$$

Determina i domini delle funzioni

$$f(x) = \frac{1}{x - 2} + \sqrt[3]{x - 1} + \ln x$$

$$f(x) = \ln \left(1 + \frac{2x}{3x + 2} \right)$$

$$f(x) = \frac{\sqrt{1 - 2x}}{\ln(x^2 - 6x)}$$

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

$$f(x) = e^{\sqrt{1 - 2\ln x}}$$

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