$$y = \frac{4x^3 - 1}{x^2 - 4}$$

Dom; $x^2 > 4 \Rightarrow x > \pm 2$

Dom: $(-\infty, -2) \cup (2, +\infty)$

$$\lim_{x \to 2^+} \frac{4x^3 - 1}{x^2 - 4} = \frac{31}{0^-} = -\infty$$

$$\lim_{x \to 2^-} = +\infty$$

ASINTOTO VERTICALE

$$\lim_{x \to -2^+} = +\infty$$

$$\lim_{x \to -2^-} = -\infty$$

ASINTOTO VERTICALE

ESEMPIO

$y = \frac{3}{x}$ $\quad$ Dom: $\mathbb{R} \setminus \{0\}$

$\lim_{x \to 0^+} = +\infty$

$\lim_{x \to 0^-} = -\infty$

A. V.

$\lim_{x \to -\infty} = 0$

$\lim_{x \to +\infty} = 0$

A. O.

STUDIO FUNZIONE

$$y = \frac{x^2 - 5x + 4}{x^2 - 3x}$$

$$x^2 - 3x \neq 0$$

$$x(x - 3)$$

$$x \neq 0$$

$$x \neq 3$$

$$\text{DOM}: (-\infty, 0) \cup (0, 3) \cup (3, +\infty)$$

$$\lim_{x \to 0^-} = \frac{4}{0} = -\infty$$

$x = 0$

$$\lim_{x \to 0^+} = +\infty$$

A. V.

$$\lim_{x \to 3^+} = \frac{-2}{0^+} = -\infty$$

$$\lim_{x \to 3^-} = -\infty$$