

$$y = \frac{x-2}{x^2}$$

1) DOMINIO = $x \neq 0$ ($D: \mathbb{R} - \{0\}$)

2) SIMMETRIA

$$f(-x) = \frac{-x-2}{(-x)^2} = \frac{-x-2}{x^2} \rightarrow \text{NON È SIMMETRICA}$$

3) INTERSEZIONE CON GLI ASSI

$$\begin{cases} y = \frac{x-2}{x^2} \\ y = 0 \end{cases} \quad \begin{aligned} \frac{x-2}{x^2} &= 0 \\ x-2 &= 0 \\ x &= 2 \end{aligned}$$

4) SEGNO

$$\frac{x-2}{x^2} > 0 \rightarrow N: x-2 > 0 \quad x > 2$$

$$D: x^2 > 0$$

	2	
-		+
+		+
-		(+)
		$x > 2$

5) ASINTOTO VERTICALE

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

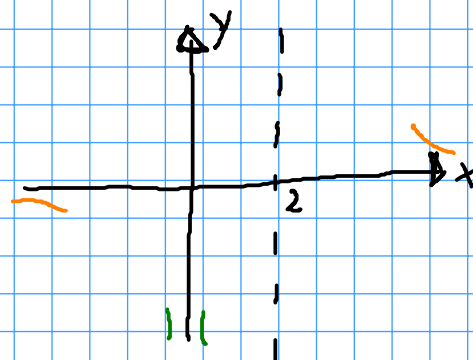
$$\lim_{x \rightarrow 0^-} \frac{x-2}{x^2} = \frac{-2^-}{0^+} = -\infty$$

ASINTOTO = 0

ASINTOTO ORIZZONTALE

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

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



$$\lim_{x \rightarrow -\infty} \frac{x-2}{x^2} = \frac{-\infty}{\infty} = 0^-$$

6) DERIVATA I°

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

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

$$= \frac{x(-x+4)}{x^4} = \frac{-x+4}{x^3}$$

$$\frac{-x+4}{x^3} > 0 \quad N: -x+4 > 0 \quad -x > -4 \quad x < 4$$

$$D: x^3 > 0 \quad x > 0$$

	0	4	
N	+	+	-
D	-	+	+
	-	+	-

MIN MAX

7) DERIVATA II°

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

$$f''(x) = \frac{-1(x^3) - (-x+4)3x^2}{x^6} = \frac{-x^3 + 3x^3 - 12x^2}{x^6} = \frac{2x - 12}{x^4}$$

$$\frac{2x-12}{x^4} > 0 \quad N: 2x-12 > 0 \Rightarrow 2x > 12 \Rightarrow x > 6$$

$$D: x^4 > 0$$

	6	
N	-	+
D	+	+
	-	+

∩ U

TROVARE LA Y

$$f(4) = \frac{4-2}{4^2} = \frac{2}{16} = \frac{1}{8}$$

$$f(6) = \frac{6-2}{6^2} = \frac{4}{36} = \frac{1}{9}$$

