

22/3/2019

TROVARE MAX, MIN, FLESSI

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

$[x = -2 \text{ max}]$

1) DOMINIO  $x \neq 0$   $D = (-\infty, 0) \cup (0, +\infty)$

2) DERIVATA

$$y' = \frac{(2x-2) \cdot x^2 - 2x(x^2 - 2x - 2)}{x^4} = \frac{\cancel{2x^3} - 2\cancel{x^2} - \cancel{2x^3} + 4x^2 + 4x}{x^4} =$$

$$= \frac{2x^2 + 4x}{x^4} = \frac{\cancel{2x}(x+2)}{x^{\cancel{4}3}} = \frac{2(x+2)}{x^3}$$

3) ZERI DELLA DERIVATA

$$\frac{2(x+2)}{\cancel{x^3}} = 0 \Rightarrow x = -2 \text{ PUNTO STAZIONARIO}$$

4) SEGNO DELLA DERIVATA

$$\frac{\cancel{2}(x+2)^{[N]}}{x^3 [D]} > 0$$

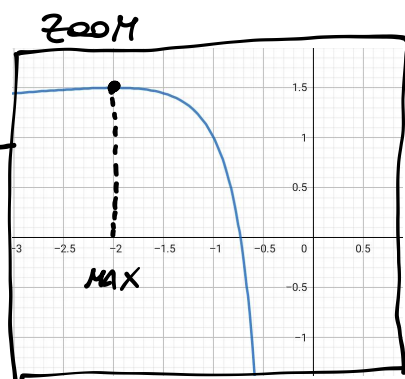
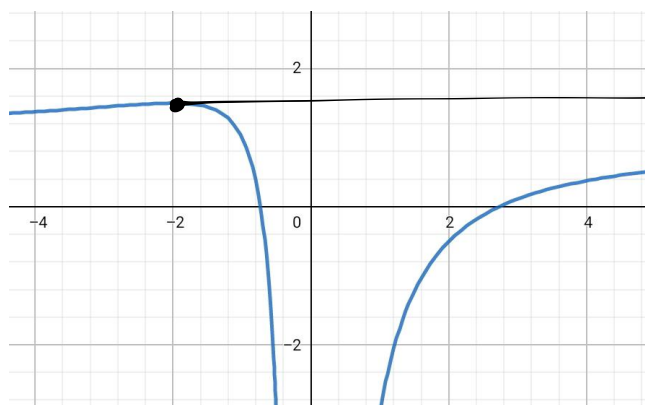
$$[N] \quad x+2 > 0 \Rightarrow x > -2$$

$$[D] \quad x^3 > 0 \Rightarrow x > 0$$

-2	0
-	+
-	-
+	-

MAX

$x = -2$  P.TO DI MAX



1) DOMINIO  $\mathbb{R} = (-\infty, +\infty)$

2) DERIVATA  $y' = 6x \cdot e^x + 3x^2 \cdot e^x = 3e^x(2x + x^2) = 3x(x+2)e^x$

3) ZERI DI  $y'$

$$3x(x+2)e^x = 0 \Rightarrow x = 0 \vee x = -2$$

$$\boxed{e^x > 0 \forall x}$$

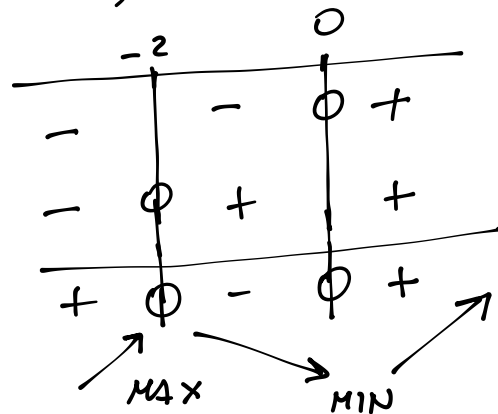
4) SEGNO DI  $y'$

$$\cancel{3x(x+2)e^x} > 0$$

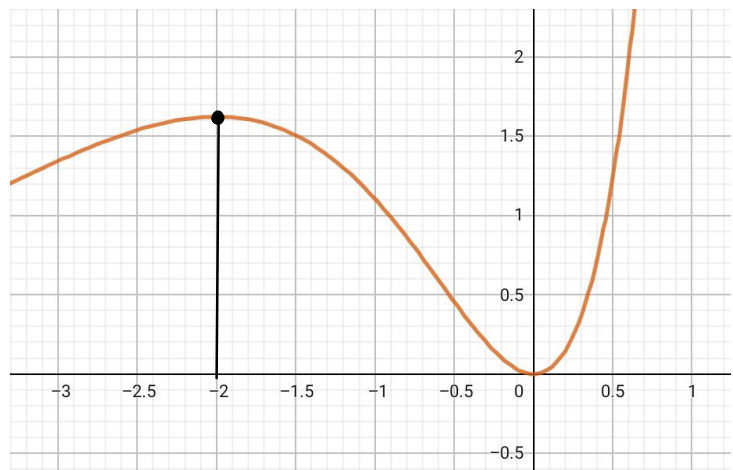
1)  $x > 0$

2)  $x+2 > 0 \Rightarrow x > -2$

1) 2)  
 $x(x+2) > 0$



$$\boxed{\begin{array}{l} x = -2 \text{ P.to DI MAX} \\ x = 0 \text{ P.to DI MIN} \end{array}}$$



381  $y = \ln(x+2) - 3x$

$\left[ x = -\frac{5}{3} \text{ max} \right]$

1) DOMINIO  $x+2 > 0$   $x > -2$   $D = (-2, +\infty)$

2) DERIVATA  $y' = \frac{1}{x+2} - 3$

3) ZERI DI  $y'$

$$\frac{1}{x+2} - 3 = 0 \quad \frac{1-3x-6}{x+2} = 0 \quad -5-3x=0$$

$$x = -\frac{5}{3}$$

4) SEGNO DI  $y'$

$$\frac{1}{x+2} - 3 > 0 \quad \frac{1-3x-6}{x+2} > 0 \quad \frac{-5-3x}{x+2} > 0$$

$N$   $-5-3x > 0$   $-3x > 5$   $x < -\frac{5}{3}$

$D$   $x+2 > 0$   $x > -2$

$x = -\frac{5}{3}$  P.to DI MAX

