

ESERCIZI FUNZIONI (I° - II° VAL ASS)

$$1. \frac{x-1-\sqrt{x^2-2x-1}}{x-2} > 0 \quad \left[x > 1 + \sqrt{2} \right]$$

$$2. \sqrt{|x-1|} + \sqrt{x^2-x} \leq 0 \quad [x = 1]$$

$$3. \sqrt{\left| \frac{1}{x} - 2 \right|} \leq \frac{1}{|x|} \quad [x = 1]$$

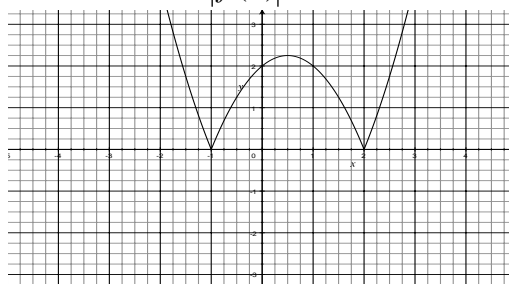
$$4. 1 - |x^2 - 2x| < 0 \quad \left[x < 1 - \sqrt{2} \vee x > 1 + \sqrt{2} \right]$$

$$5. \sqrt{x^2 + |x-2|} > x + |x| \quad \left[0 \leq x \leq \frac{2}{3} \right]$$

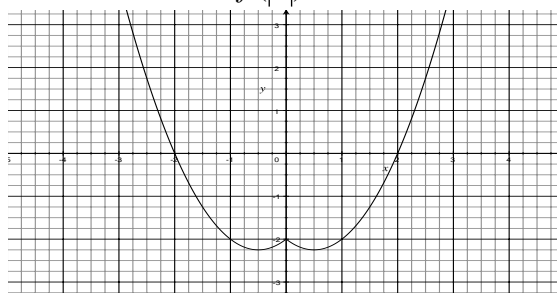
$$6. |x| - 2|x+3| > 2 \quad \left[-4 < x < -\frac{8}{3} \right]$$

7. Data la funzione $f(x) = x^2 - x - 2$

a. Tracciare il grafico della funzione $|f(x)|$.



b. Tracciare il grafico della funzione $f(|x|)$.



$$8. \left| \frac{x^2-1}{2x+1} \right| < 1. \quad \left[-2 < x < 1 - \sqrt{3} \vee 0 < x < 1 + \sqrt{3} \right]$$

$$9. \frac{3x-4x^2}{|x-2|} < 1. \quad [x < 2]$$

$$10. 2x + 1 < \sqrt{4x^2 - 4x - 15}.$$

$$11. \frac{\sqrt{x^2 - 1} - |x + 1|}{x^2 - 2x - 3} \leq 0.$$

$$12. \frac{|x| + \sqrt{1 - x^2}}{|x| - \sqrt{1 - x^2}} < 0.$$

$$\left[x \leq -\frac{3}{2} \right]$$

$$[x > 3]$$

$$\left[-\frac{1}{\sqrt{2}} < x < \frac{1}{\sqrt{2}} \right]$$