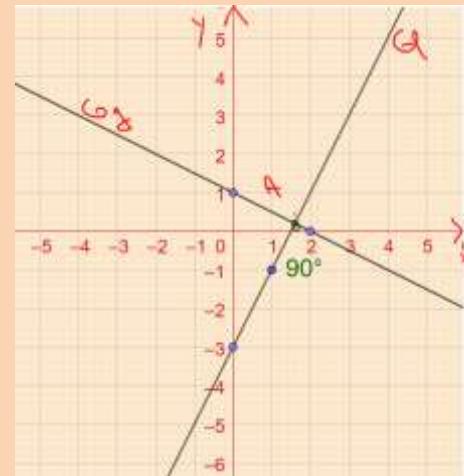


$$\begin{array}{ll} \text{a) } f: \mathbb{R} \rightarrow \mathbb{R} & g: \mathbb{R} \rightarrow \mathbb{R} \\ f(x) = 2x - 3 & g(x) = -\frac{1}{2}x + 1 \end{array} \quad \begin{array}{l} h: \mathbb{R} \rightarrow \mathbb{R} \\ h(x) = 2x + 3 \end{array} \quad \left\{ \begin{array}{l} \text{a) } m(Gf, Gh) \\ \text{b) } m(Gf, Gg) \end{array} \right.$$

In general: $f: \mathbb{R} \rightarrow \mathbb{R}$ $g: \mathbb{R} \rightarrow \mathbb{R}$ $\left\{ \begin{array}{l} f(x) = ax + b \\ g(x) = cx + d \end{array} \right. \Rightarrow \begin{array}{l} Gf \parallel Gg \Leftrightarrow a = c \\ Gf \perp Gg \Leftrightarrow a \cdot c = -1 \end{array}$

Verificare: $2 \cdot (-\frac{1}{2}) = -2 \cdot \frac{1}{2} = -1 \Rightarrow Gf \perp Gg \Rightarrow m(Gf, Gg) = 90^\circ$

$$\begin{array}{c|cc|c|cc} x & 0 & 1 & x & 0 & 2 \\ \hline f(x) & -3 & -1 & g(x) & 1 & 0 \end{array}$$



Determinieren $Gf \cap Gg = \{A(m, n)\} \Rightarrow$

$$A(m, n) \in Gf \Rightarrow f(m) = n \quad \left\{ \begin{array}{l} f(m) = g(m) \Rightarrow \\ f(m) = m \end{array} \right.$$

$$A(m, n) \in Gg \Rightarrow g(m) = n \quad \left\{ \begin{array}{l} g(m) = -\frac{1}{2}m + 1 \cdot 2 \\ 2m - 3 = -\frac{1}{2}m + 1 \end{array} \right.$$

$$4m - 6 = -m + 2 \Rightarrow 4m + m = 2 + 6 \Rightarrow 5m = 8 \Rightarrow m = \frac{8}{5}$$

$$m = f(m) \Rightarrow m = f\left(\frac{8}{5}\right) \Rightarrow m = 2 \cdot \frac{8}{5} - 3 = \frac{16 - 15}{5} = \frac{1}{5}$$

$$A\left(\frac{8}{5}, \frac{1}{5}\right)$$

$$\text{b) } f: \mathbb{R} \rightarrow \mathbb{R} \quad h: \mathbb{R} \rightarrow \mathbb{R} \quad \left\{ \begin{array}{l} f(m) = m \\ h(m) = 2m + 3 \end{array} \right. \Rightarrow Gf \parallel h \Rightarrow m(Gf, Gh) = 0^\circ$$

$$\text{Probe: } \begin{array}{c|cc|c|cc} x & 0 & 1 & x & 0 & 1 \\ \hline f(x) & -3 & -1 & h(x) & 3 & 1 \end{array}$$

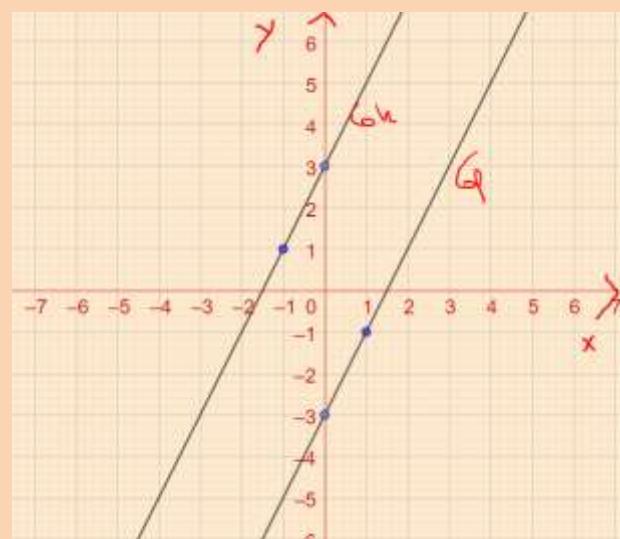
Die $\{A(m, n)\} = Gf \cap Gh \Rightarrow$

$$\Rightarrow A(m, n) \in Gf \Rightarrow f(m) = n \Rightarrow 2m + 3 = n \quad \left\{ \begin{array}{l} f(m) = m \\ h(m) = n \end{array} \right. \Rightarrow$$

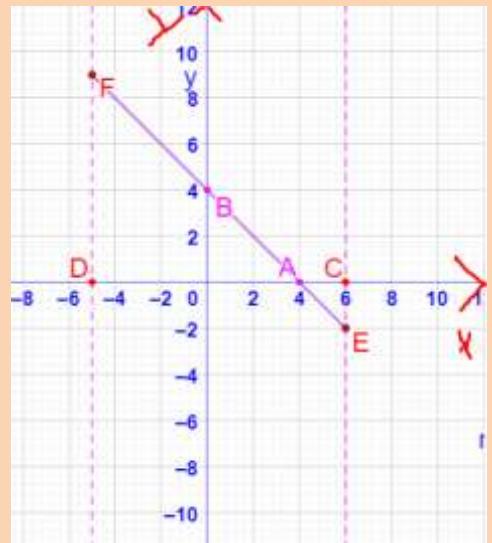
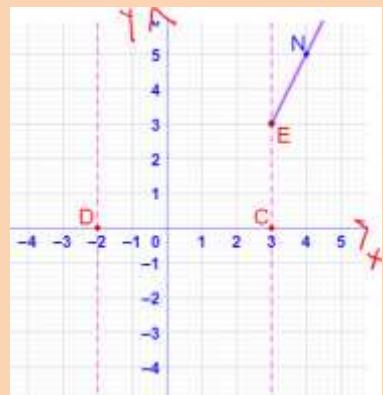
$$A(m, n) \in Gh \Rightarrow h(m) = n \Rightarrow 2m + 3 = n \quad \left\{ \begin{array}{l} f(m) = m \\ h(m) = n \end{array} \right. \Rightarrow$$

$$2m + 3 = 2m + 3 \Rightarrow 2m - 2m = -3 - 3 \Rightarrow 0 \cdot m = -6 \text{ (impossibile)}$$

$$\Rightarrow A(m, n) \Rightarrow Gf \cap Gh = \emptyset \Rightarrow Gf \parallel Gh$$



2) Reprezentati grafic functie: $P: [-5, 6] \rightarrow \mathbb{R}$ $P(x) = -x + 4$ $P(x) + \frac{x+9}{4} = 0$

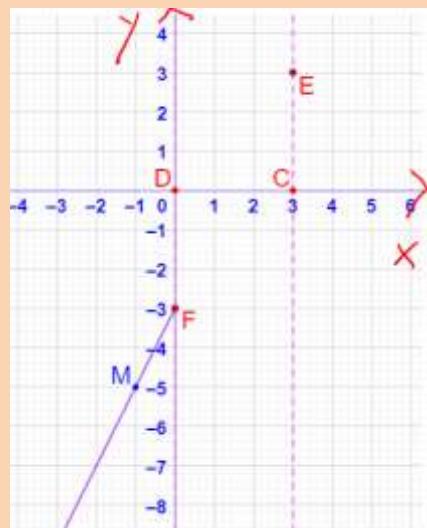


$f: [3, \infty) \rightarrow \mathbb{R}$, $f(x) = 2x - 3$

$$P(x) + \frac{4}{5} = 1$$

$f: (-\infty, 0) \rightarrow \mathbb{R}$, $f(x) = 2x - 3$

$$P(x) + \frac{-1}{5} = 1$$



....