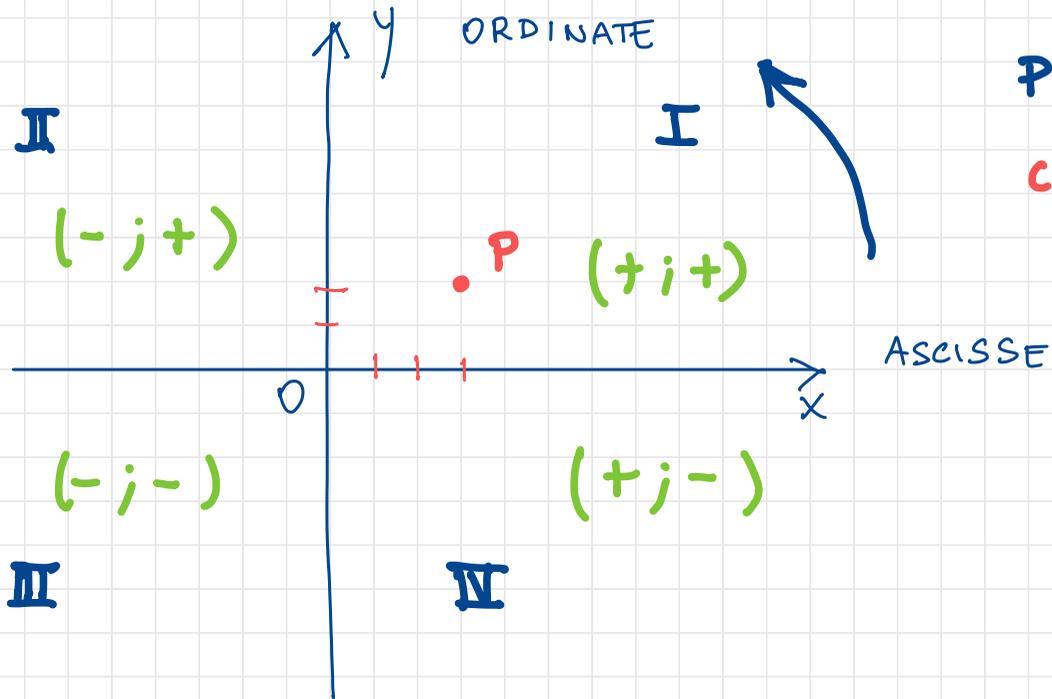


# IL PIANO CARTESIANO



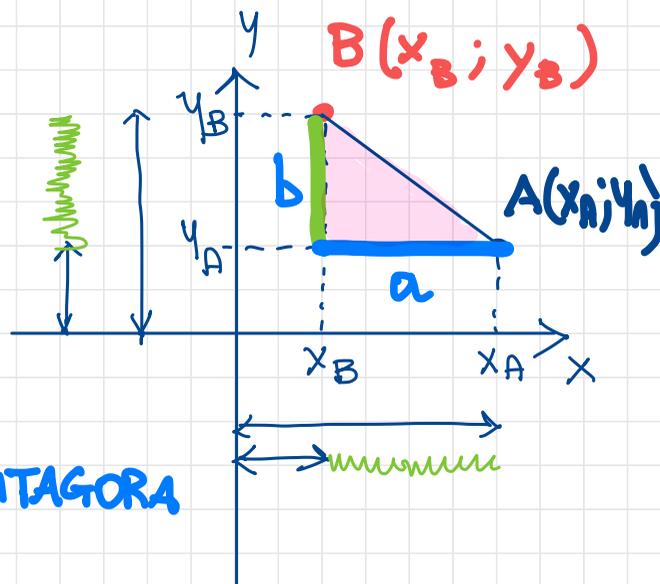


$P(3;2)$   
coppia ordinata

DISTANZA FRA DUE PUNTI

$$\overline{AB}^2 = a^2 + b^2$$

TEOREMA DI PITAGORA



$$a = x_A - x_B \quad ; \quad b = y_B - y_A$$

$$\overline{AB}^2 = (x_A - x_B)^2 + (y_B - y_A)^2$$

SE SCAMBIO, ESSENDO AL QUADRATO NON CAMBIA

$$\overline{AB}^2 = (x_A - x_B)^2 + (y_A - y_B)^2$$

$$\overline{AB} = \sqrt{(x_A - x_B)^2 + (y_A - y_B)^2}$$

DISTANZA FRA DUE PUNTI

ESEMPIO

$$A(-1; 4) \quad B(1; -3)$$

$$\overline{AB} = \sqrt{(-1-1)^2 + (4+3)^2} = \sqrt{4+49} = \sqrt{53}$$

PUNTO MEDIO

È LA MEDIA DELLE COORDINATE

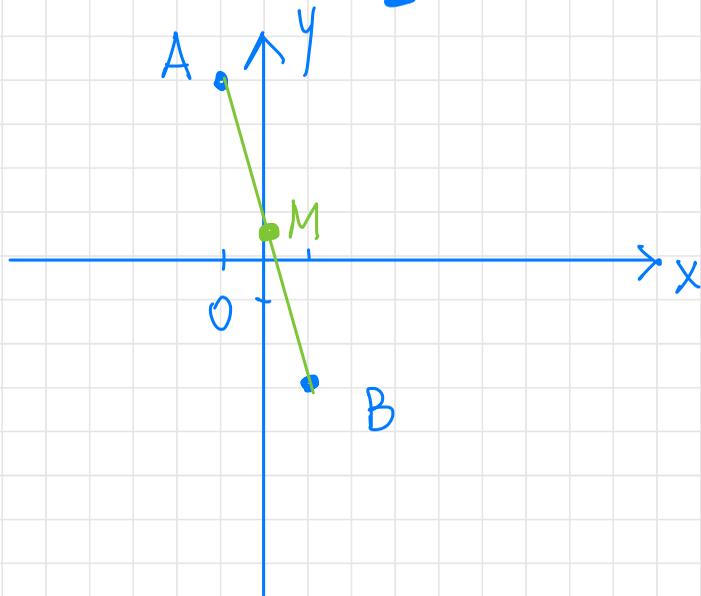
$$x_M = \frac{x_A + x_B}{2}$$

$$y_M = \frac{y_A + y_B}{2}$$

ESEMPIO

$$x_M = \frac{-1+1}{2} = 0$$

$$y_M = \frac{4-3}{2} = \frac{1}{2}$$



# BARICENTRO DI UN TRIANGOLO

$$x_G = \frac{x_A + x_B + x_C}{3}$$

$$y_G = \frac{y_A + y_B + y_C}{3}$$

ESEMPIO: A(0; -1) B(6; 2); C(3; 5)

Perimetro, coord. BARICENTRO

$$\overline{AB} = \sqrt{36 + 9} = \sqrt{45} = \sqrt{5 \cdot 9} = 3\sqrt{5}$$

$$\overline{BC} = \sqrt{9 + 9} = \sqrt{18} = \sqrt{2 \cdot 9} = 3\sqrt{2}$$

$$\overline{AC} = \sqrt{9 + 36} = \sqrt{45} = 3\sqrt{5}$$

$$2p = \overline{AB} + \overline{BC} + \overline{AC} = 3\sqrt{5} + 3\sqrt{2} + 3\sqrt{5} = 6\sqrt{5} + 3\sqrt{2}$$

$$x_G = \frac{0 + 6 + 3}{3} = 3$$

$$y_G = \frac{-1 + 2 + 5}{3} = 2$$

$$G(3; 2)$$

