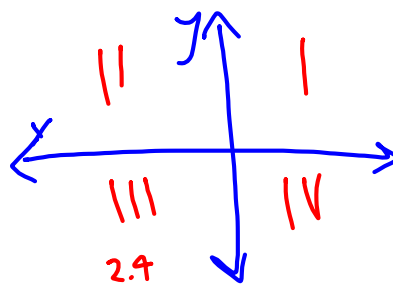


P2: Cartesian Coordinate Plane

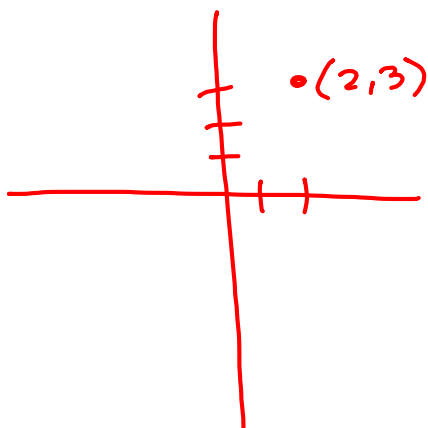
ordered pair: (x, y)



Ex1

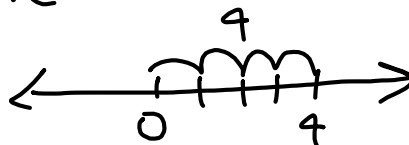
Graph 2.4 

Graph $(2, 3)$

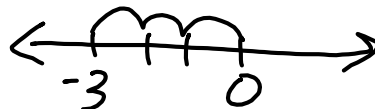


Absolute value: distance away from zero
 * always positive

$$|4| = 4$$

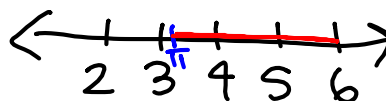


$$|-3| = 3$$



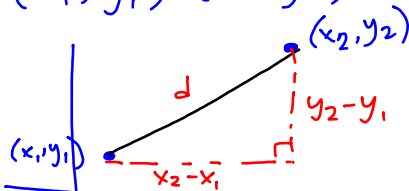
$$|\pi - 6| =$$

$$\boxed{6 - \pi}$$



Distance Formula:

(x_1, y_1) (x_2, y_2)



$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = d^2$$

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = d$$

Ex 2

$(1, 3)$ $(5, 8)$
 x_1, y_1 x_2, y_2

$$d = \sqrt{(5-1)^2 + (8-3)^2}$$

$$d = \sqrt{4^2 + 5^2}$$

$$d = \sqrt{16+25} = \sqrt{41}$$

Midpoint: average

(x_1, y_1) (x_2, y_2)

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

Ex 3

$(1, 3)$ $(6, 8)$

$$\text{MP: } \left(\frac{1+6}{2}, \frac{3+8}{2} \right)$$

$$\left(\frac{7}{2}, \frac{11}{2} \right) \leftrightarrow (3.5, 5.5)$$