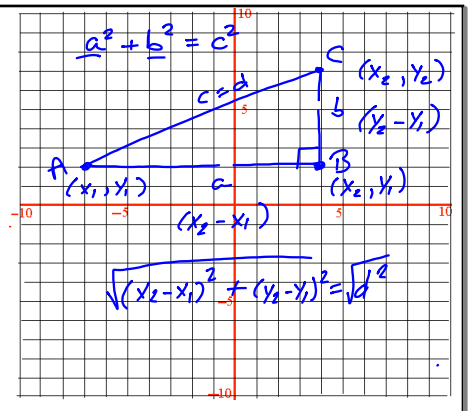
5.2 Distance Formula and Quadrilaterals

Distance formula uses two points to determine length in a coordinate plane



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

A (5, 3) B (2, −1)

$$= \sqrt{(5-2)^2 + (3-(-1))^2}$$
$$= \sqrt{3^2 + 4^2}$$
$$= \sqrt{9+16}$$
$$= \sqrt{25} = 5$$

(7, 2) (1, 6)

$$\sqrt{(7-1)^2 + (2-6)^2}$$
$$\sqrt{6^2 + (-4)^2}$$
$$\sqrt{36+16}$$
$$\sqrt{52} \quad 2\sqrt{13} \text{ or } 7.21$$

Parallelogram

opposite sides
- parallel – same slope
- congruent
  - Length = equal

use distance formula to see if opposite sides are equal

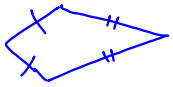
Rhombus

All sides =

check to see if all sides are =

kite

Consecutive sides are =



Parallel and Slope