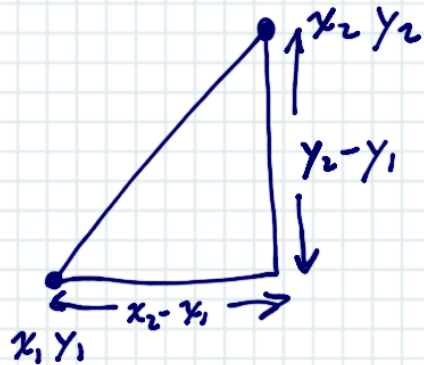


Quadrilateral Properties.

Distance for two points (x_1, y_1) (x_2, y_2) the distance between points is $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

This is similar to the pythagorean equation:



Slope between points (x_1, y_1) & (x_2, y_2)


$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

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


And if two lines are perpendicular, their slopes have the relationship $m_2 = -\frac{1}{m_1}$

A Rhombus  has :

- 1) 4 congruent sides
- 2) Opposite sides are parallel
- 3) diagonals are perpendicular
- 4) diagonals bisect each other
- 5) opposite angles are congruent
- 6) area = $\frac{1}{2} d_1 d_2$

A parallelogram  has

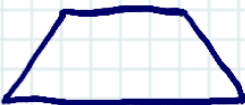
- 1) 2 pairs of congruent sides
- 2) Opposite sides are parallel
- 3) diagonals bisect each other
- 4) opposite angles are congruent

A square  has all Rhombus properties except

- 5) all angles are congruent and are right, 90°

A kite  has

- 1) 2 pairs of congruent sides which are adjacent
- 2) diagonals are perpendicular
- 3) only short diagonal is bisected
- 4) angles between different length sides are congruent

Isosceles Trapezoids  have

- 1) 2 'bases' which are parallel
- 2) Other sides are congruent
- 3) diagonals are congruent
- 4) Each pair of base angles are congruent