There are formulas that you will be provided with to calculate various pieces of information about pairs of points.

Each formula refers to a set of two points:

$$(x_1, y_1) \text{ and } (x_2, y_2)$$

We can measure the distance between two points. This distance gives us the length of the segment drawn between the two points.

Distance Formula:

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

Example 1: (2, 2) and (5, -2)

Distance: _____

Midpoint Formula:

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

NOTICE: the answer to a midpoint formula problem will be in the form (1, 2) – meaning your **answer** is another **point**!

Example 1: (2, 2) and (5, -2)

Midpoint: _____

Example 2: (1, -4) and (2, 3)

Distance: _____

Midpoint: _____

Example 3: (0, 2) and (-2, -10)

Distance: _____

Midpoint: _____