Lesson 1 – *Distance between two points*

The shortest distance between two points is a straight line (segment). To calculate this distance between point $A(x_1, y_1)$ and point $B(x_2, y_2)$ we use the following formula:

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

The length is always expressed as a positive number.

(a segment with endpoints A and B is written as $\overline{AB}$)

Ex. Find the distance of $\overline{AB}$ given A(4,3) and B(7,7).

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

$$= \sqrt{(7-4)^2 + (7-3)^2}$$

$$= \sqrt{(3)^2 + (4)^2}$$

$$= \sqrt{9 + 16}$$

$$= \sqrt{25}$$

= 5 units