

# 9/24/18 Topic: Finding the Distance of a Line Segment

Distance = Length

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

Ex. 1: Find the length of a line segment whose endpoints are D(-4, 3) and F(5, 3).

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

$$d = \sqrt{(9)^2 + (0)^2}$$

$$d = \sqrt{81 + 0}$$

$$d = \sqrt{81} = \boxed{9}$$

Ex. 2: Find the length of the diameter of a circle whose endpoints are  $C(-1, 6)$  and  $D(-5, 4)$ . Simplify.

$$\begin{array}{c|c} X & Y \\ \hline C(-1, 6) \\ D(-5, 4) \end{array}$$

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

$$d = \sqrt{(-5 - (-1))^2 + (4 - 6)^2}$$

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

$$d = \sqrt{16 + 4}$$

$$d = \sqrt{20}$$

$$d = \sqrt{4 \cdot 5}$$

$$d = 2\sqrt{5}$$

$$Y = 20 \div X$$

and Graph

X	Y
1	20
2	10
3	
4	5