7 - 7
Distance and the Pythagorean Theorem (Day Two)

Instead of graphing two points and creating a triangle, we can use the **distance formula**:

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

Ex: **Find the distance between M(- 3, 5) and N(5, - 4).**

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

$$d = \sqrt{(-3-5)^2 + (5+ {}^+4)^2}$$

$$d = \sqrt{(-8)^2 + (9)^2}$$

$$d = \sqrt{64 + 81}$$

$$d = \sqrt{145}$$

$$\boxed{d = 12.04}$$

$\sqrt{}$

" $2^{nd} \; x^2$ "

$\sqrt{(145}$

Ex: Find the distance between A(- 3, - 5) and B(12, 3).

$$d = \sqrt{(-3-12)^2 + (-5-3)^2}$$

$$d = \sqrt{(-15)^2 + (-8)^2}$$

$$d = \sqrt{225 + 64}$$

$$d = \sqrt{289}$$

$$\boxed{d = 17}$$

Ex: Find the distance between P(- 4, 5) and Q(- 1, - 3).

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

$$d = \sqrt{(-3)^2 + (8)^2}$$

$$d = \sqrt{9 + 64}$$

$$d = \sqrt{73}$$

$$\boxed{d = 8.54}$$

Homework:

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