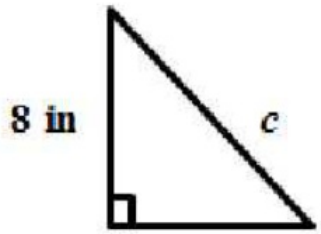
Sec1 H	Notes 5-4 Distance Formula	Unit 5

Warm-Up.

1. What is the Pythagorean Theorem?

$a^2+b^2=c^2$

2. Find the value of c.



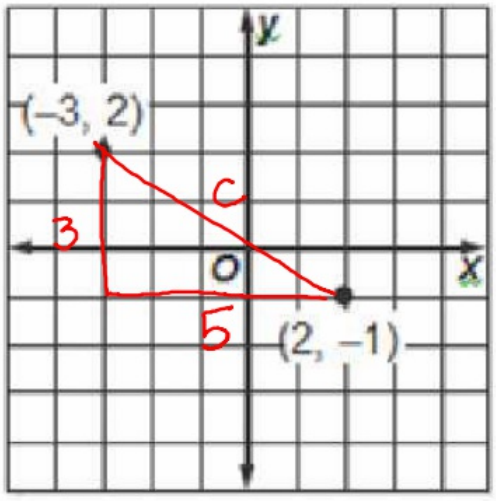
$7^2+8^2=c^2$

$49+64=c^2$

$\sqrt{113}=\sqrt{c^2}$

$\sqrt{113}=c$

3.: Create a triangle to find the distance between the two points.



$5^2+3^2=c^2$

$25+9=c^2$

$\sqrt{34}=\sqrt{c^2}$

$\sqrt{34}=c$

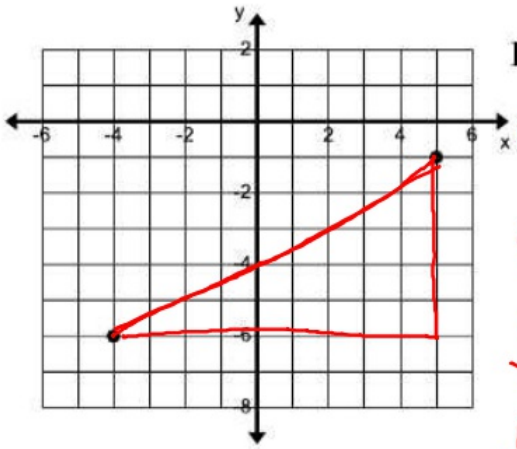
Find the distance (2, 4) and (7, 29)

Sec1 H	Notes 5-4 Distance Formula	Unit 5

Distance Formula:

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

Example 1: Find the distance between C(-4, -6) and D(5, -1).



Pythagorean Theorem

$9^2 + 5^2 = c^2$

$81 + 25 = c^2$

$\sqrt{106} = \sqrt{c^2}$

$\sqrt{106} = c$

Distance Formula

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

$$\sqrt{106}$$

Example 2: Find the distance between each pair of points.

a. X(1, 3) and Y(2, 7)

Distance Formula: $\sqrt{(1-2)^2+(3-7)^2}$

Exact Answer (Radical): $\sqrt{17}$

Estimated Answer (Decimal): 4.1

b. E(-5, 6) and F(8, -4)

Distance Formula: $\sqrt{(-5-8)^2+(6--4)^2}$

Exact Answer (Radical): $\sqrt{269}$

Estimated Answer (Decimal): 16.4

c. J(4, 3) and K(-3, -7)

Distance Formula: $\sqrt{(4--3)^2+(3--7)^2}$

Exact Answer (Radical): $\sqrt{149}$

Estimated Answer (Decimal): 12.2

Example 3: Find the distance between the two points.

a. A(2, 4) and B (-2, 2)

Distance Formula:

Exact Answer (Radical):

Estimated Answer (Decimal):

b. X(0, 5) and Y(-2, 3)

Distance Formula:

Exact Answer (Radical):

Estimated Answer (Decimal):

c. G(-5, 0) and H(-3, -10)

Distance Formula:

Exact Answer (Radical):

Estimated Answer (Decimal):