Warmup 1 /(# of letters in "eight thousand")

Created by Mr. Lischwe

1. Use the recursive geometric rule to find the first four terms:

$$a_n = -2 \cdot a_{n-1}$$
$$a_1 = 3$$

3, -6, 12, -24

1. Twelve bacteria are placed into a petri dish. The number of bacteria doubles every thirty minutes. Is this a linear model or exponential?

2. Solve: $-7 = -1 + \frac{x}{3}$

+1 +1

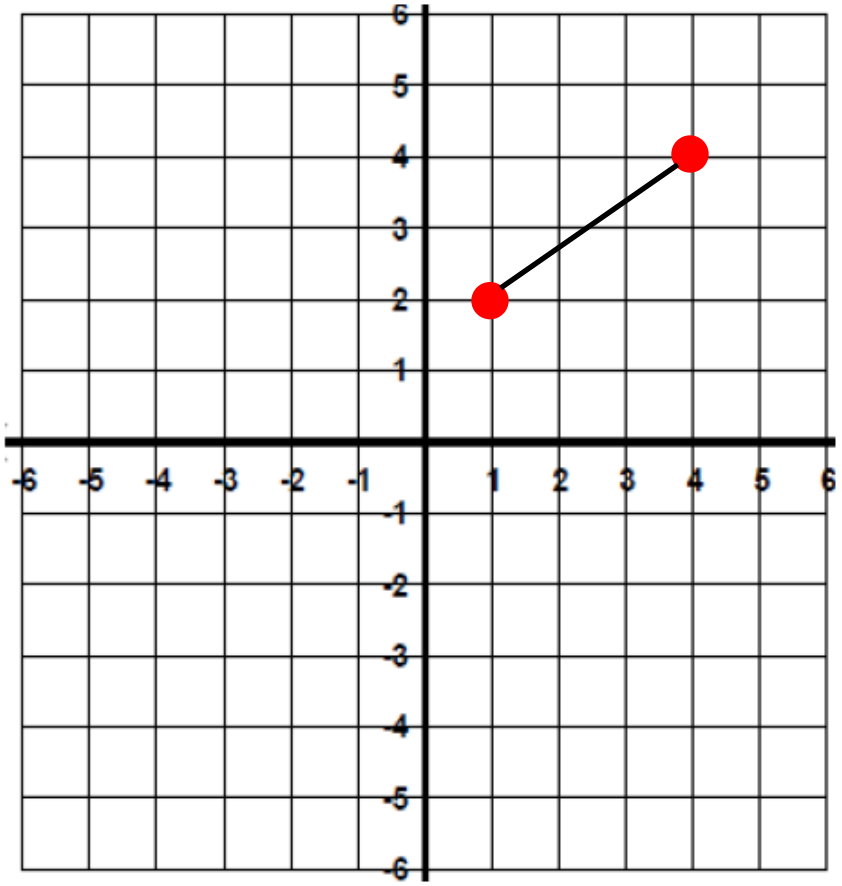
$-6 = \frac{x}{3}$ (×3)

$-18 = x$

TABLE OF CONTENTS: 2ND SEMESTER

Distance Formula

- **How far apart are these two points???**



Pythagorean Theorem: Videos

https://www.youtube.com/watch?v=CAkMUdeB06o

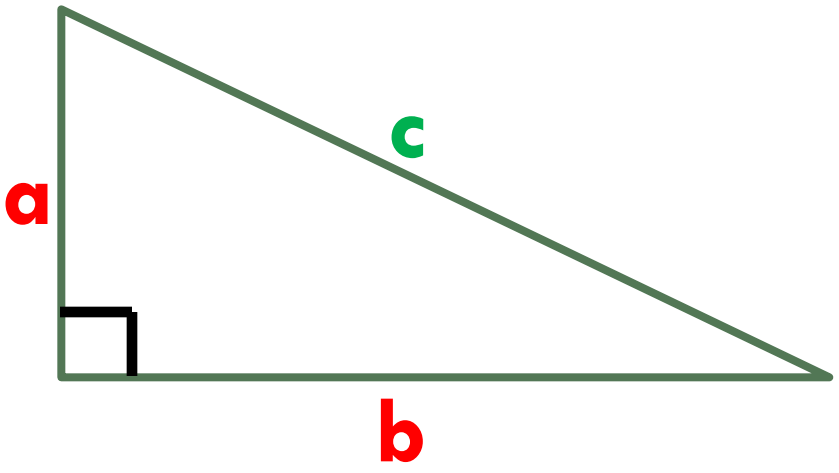
https://www.youtube.com/watch?v=pVo6szYE13Y

Remember: Pythagorean Theorem

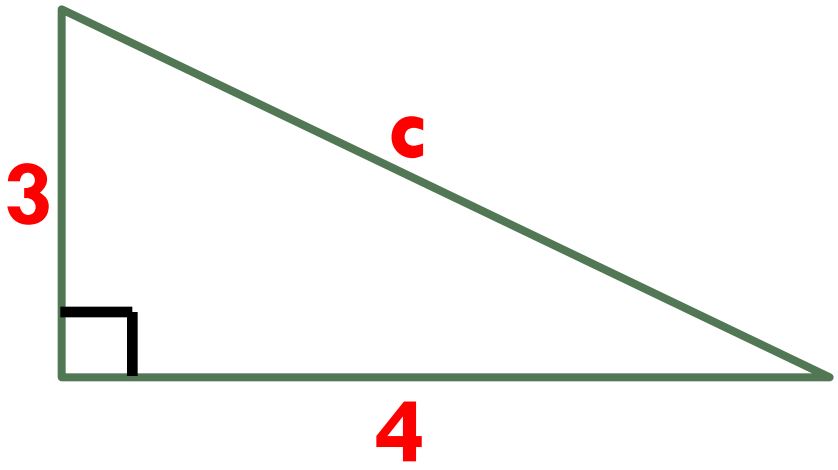
Pythagorean Theorem

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

- **a** and **b** are the short sides (legs) of a right triangle
- **c** is the long side (hypotenuse)



Find the missing side.



$3^2 + 4^2 = c^2$

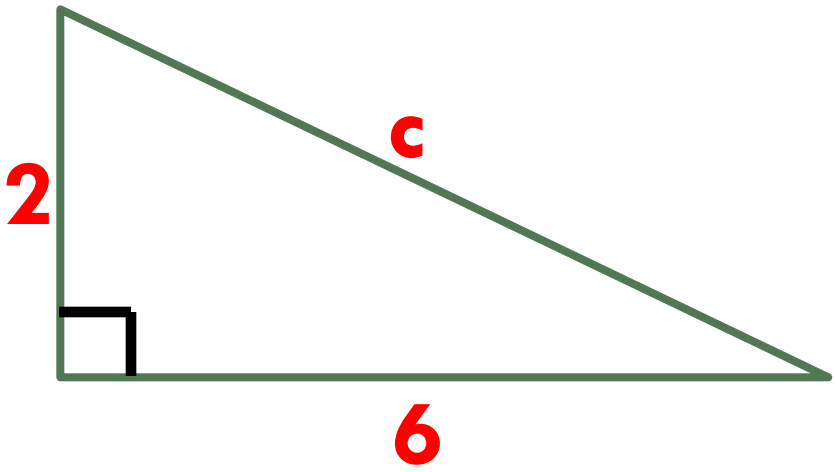
$9 + 16 = c^2$

$25 = c^2$

$\sqrt{25} = c$

$5 = c$

Find the missing side



$$2^2 + 6^2 = c^2$$

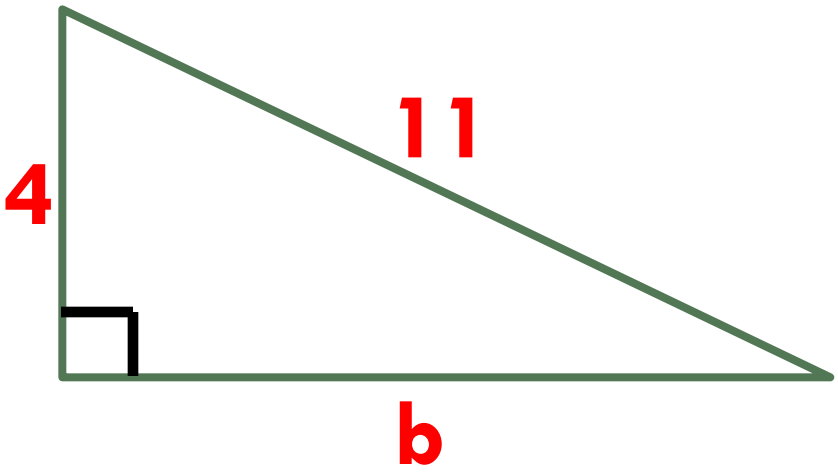
$$4 + 36 = c^2$$

$$40 = c^2$$

$$\sqrt{40} = c^2$$

$$6.3 \approx c$$

Find the missing side



$4^2 + b^2 = 11^2$

$16 + b^2 = 121$

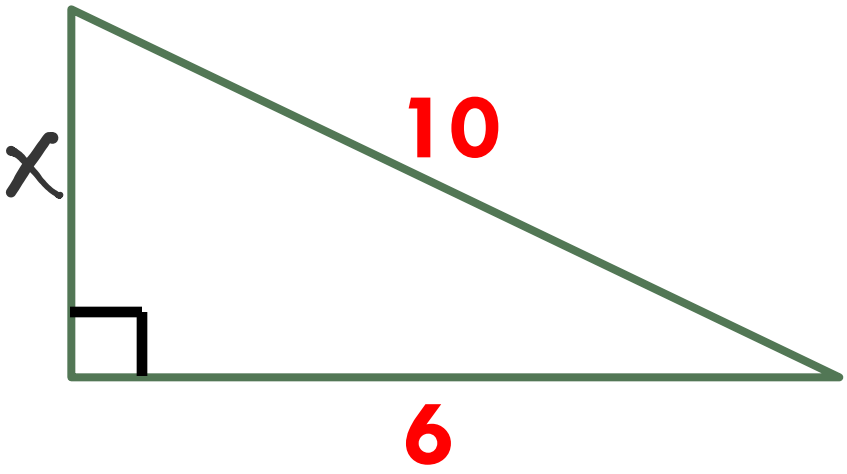
$-16 \qquad -16$

$b^2 = 105$

$b = \sqrt{105}$

$b \approx 10.2$

Find the missing side



$x^2 + 6^2 = 10^2$

$x^2 + 36 = 100$

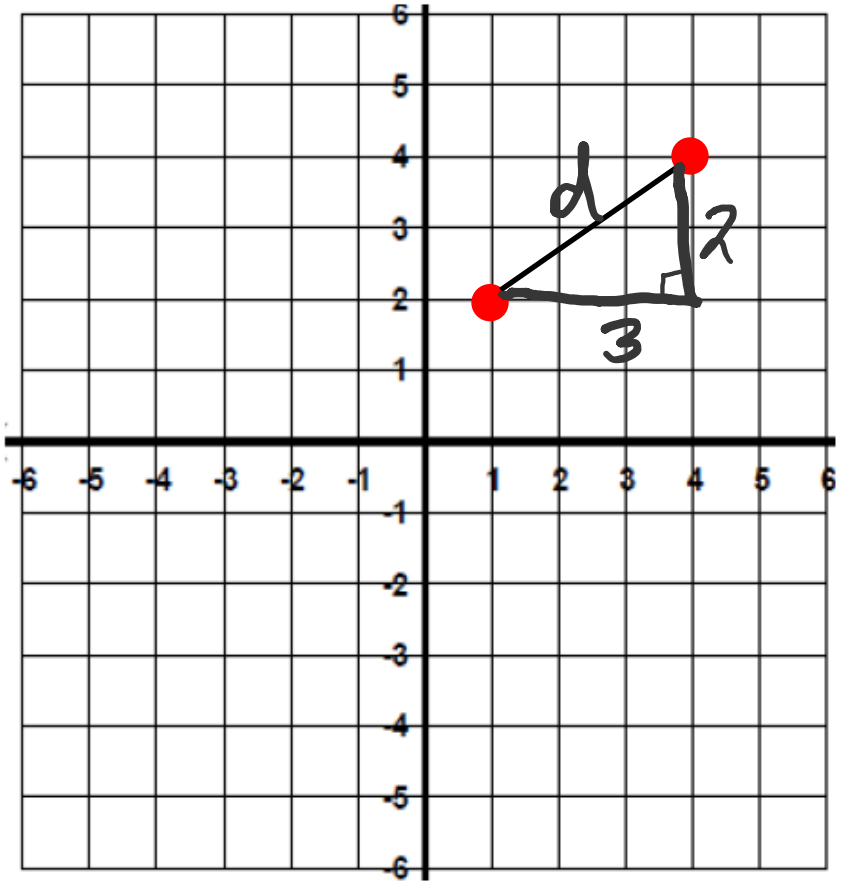
$-36 \quad -36$

$x^2 = 64$

$x = 8$

How can we use the Pythagorean Theorem help us with this problem?

- How far apart are these two points?



$3^2+2^2=d^2$

$9+4=d^2$

$13=d^2$

$3.6\approx d$

Find the distance between the points

(1, 2) and (7, 10)

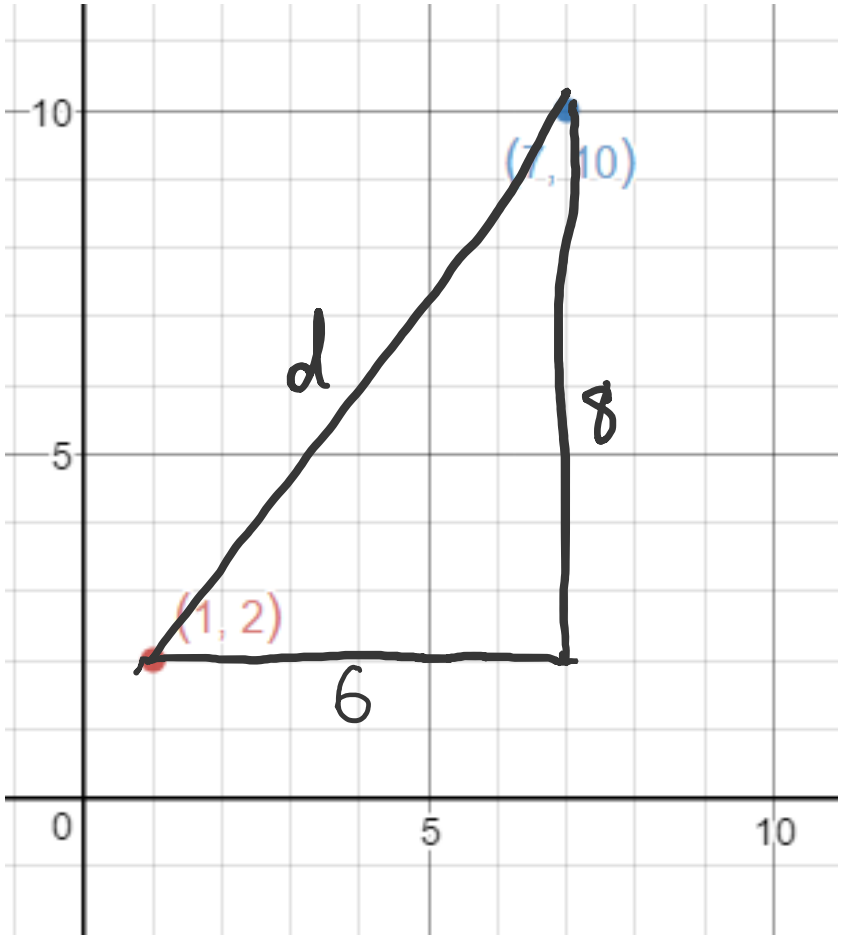
$6^2 + 8^2 = d^2$

$36 + 64 = d^2$

$100 = d^2$

$\sqrt{100} = d$

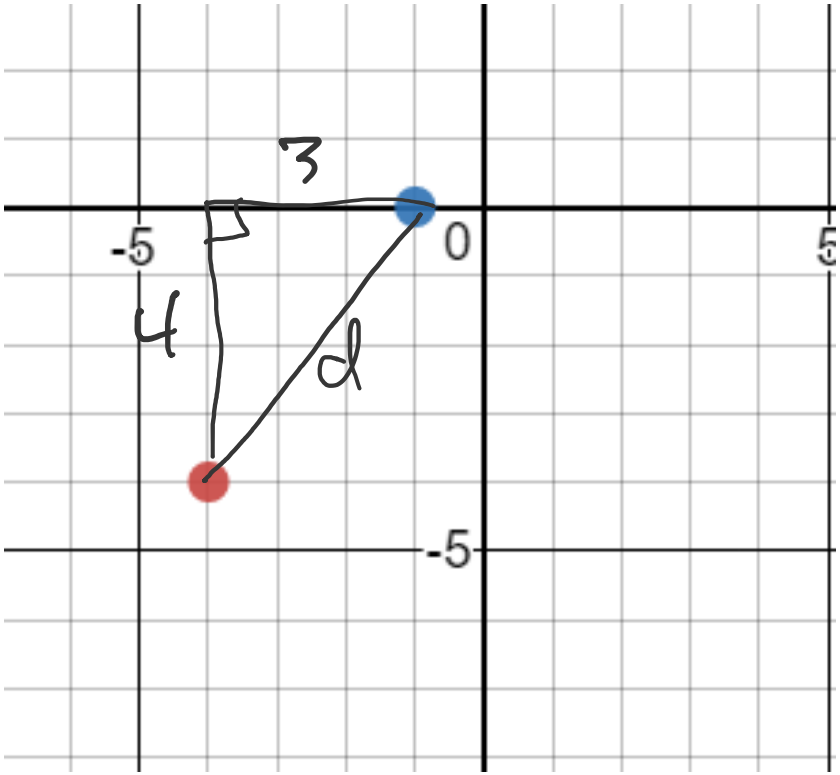
10 units = d



Find the distance between the points

(-4, -4) and (-1, 0)

5 units



$4^2 + 3^2 = d^2$

$16 + 9 = d^2$

$25 = d^2$

$\sqrt{25} = d$

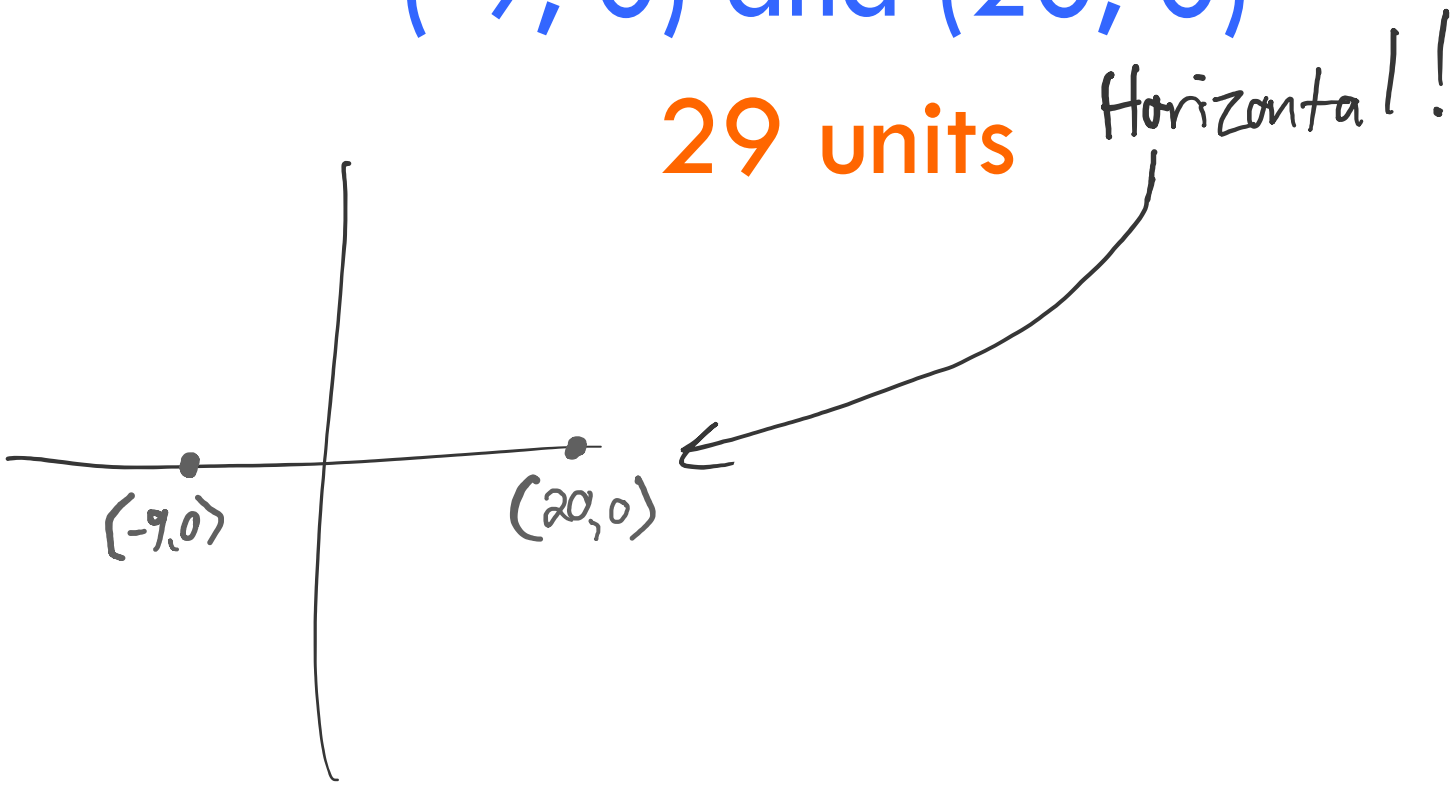
$5 = d$

units

Find the distance between the points

(-9, 0) and (20, 0)

29 units



Find the distance between the points

(0, 25) and (0, -12)

37 units

CITY PLANNER PROBLEM

Homework

- Worksheet