TODAY'S AGENDA: Week of April 30- May 4

- Work on Khan Academy Mission:
- Whole Class Lessons
- Today's Objective:
- Distance Formula
- Midpoint and Dividing Line Segments

- Standards:
- G.SRT.C.8:
- Use sine, cosine, tangent, the Pythagorean Theorem and properties of special right triangles to solve right triangles in applied problems.

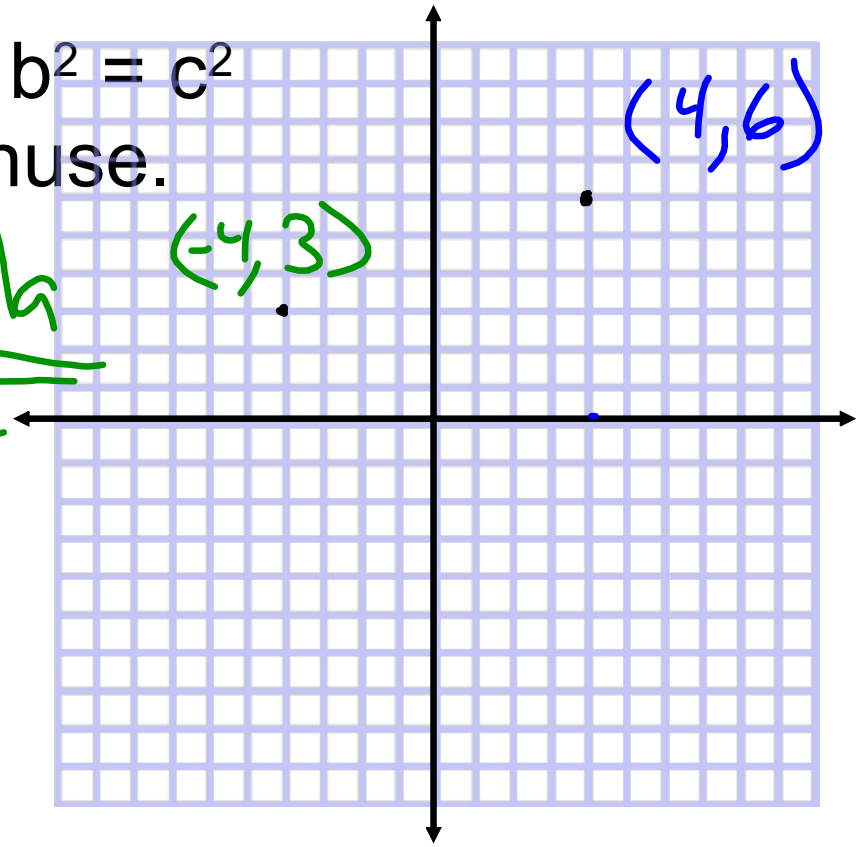
Oct 2-9:13 AM

Finding the Distance Between Two Points

- Use the Pythagorean Theorem to find the distance between two points.

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

Where c is the hypotenuse.



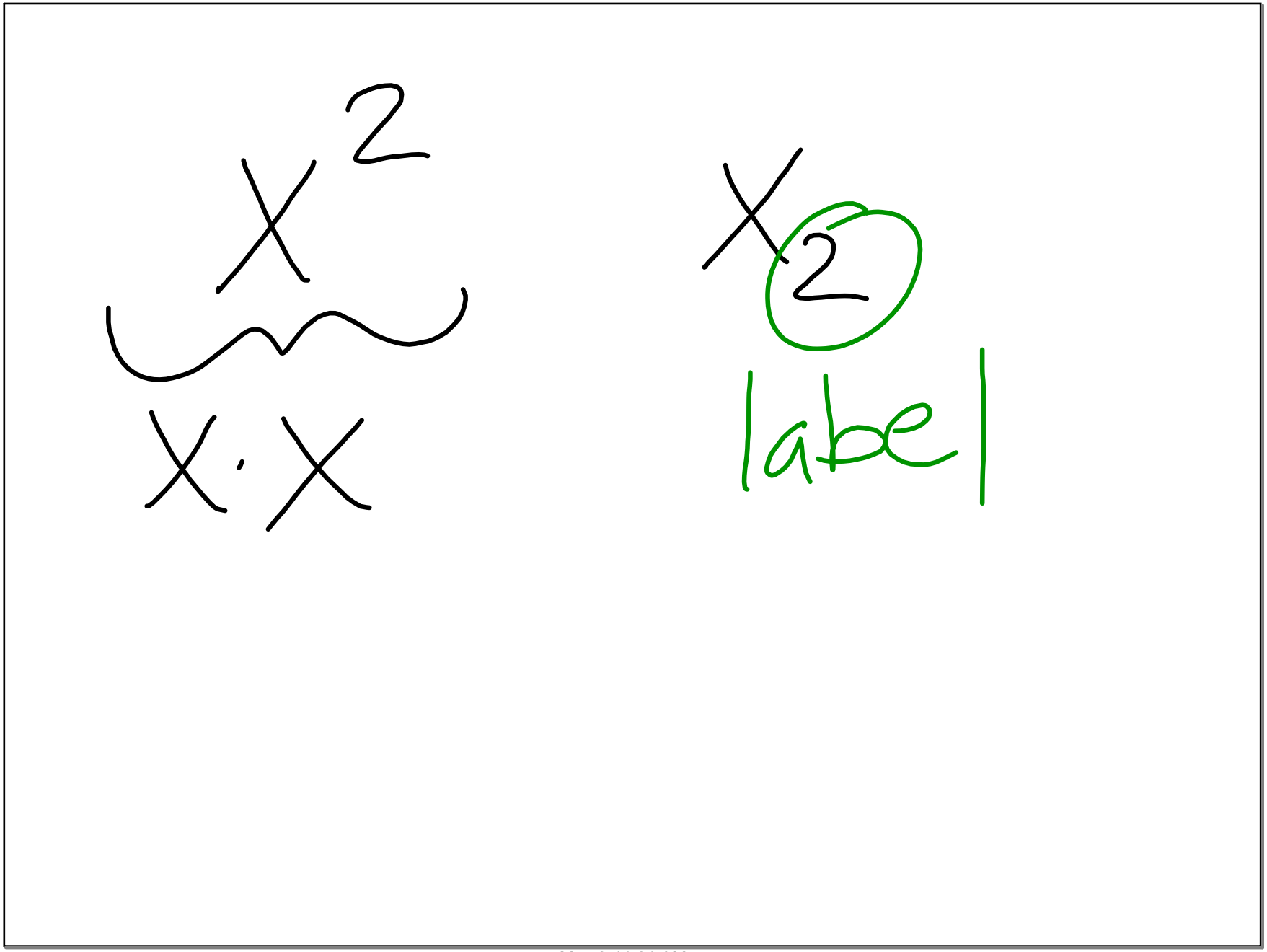
Distance Formula

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

(4,6) (-4,3)

x_1 y_1 x_2 y_2

Apr 30-8:15 AM



May 2-11:21 AM

Distance Formula

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

$$=\sqrt{(-4-4)^2+(3-6)^2}$$

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

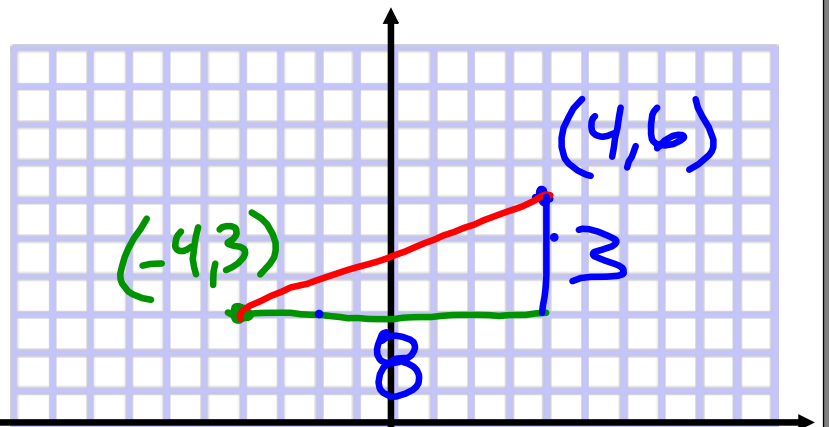
$$=\sqrt{64+9}=\sqrt{73}$$

x_1, y_1 x_2, y_2

$(4,6)(-4,3)$

Pythagorean Thm

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



8^2+3^2

$64+9$

$73=c^2$

$\sqrt{73}$

May 2-11:23 AM

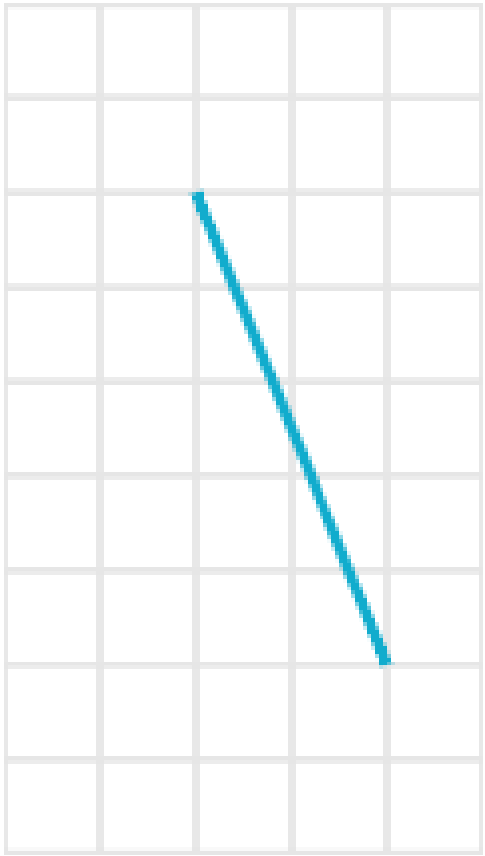
What's the distance between (8, -3) and (4, -7)?

Distance formula = $\sqrt{32}$

Pythagorean Thm = $\sqrt{32}$

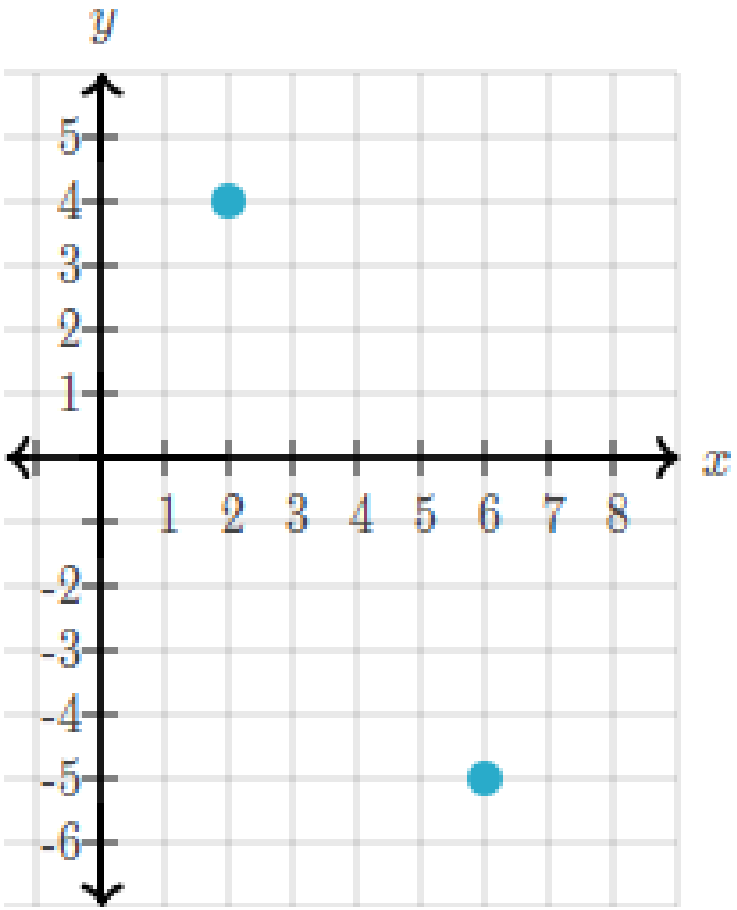
Apr 30-8:22 AM

What is the length of the line?



Apr 30-8:23 AM

What is the distance between the following points?



Apr 30-8:28 AM

Midpoint Formula

- The ***Midpoint*** is the point on a line that is *exactly* in the middle of the line, separating the line into two equal parts.

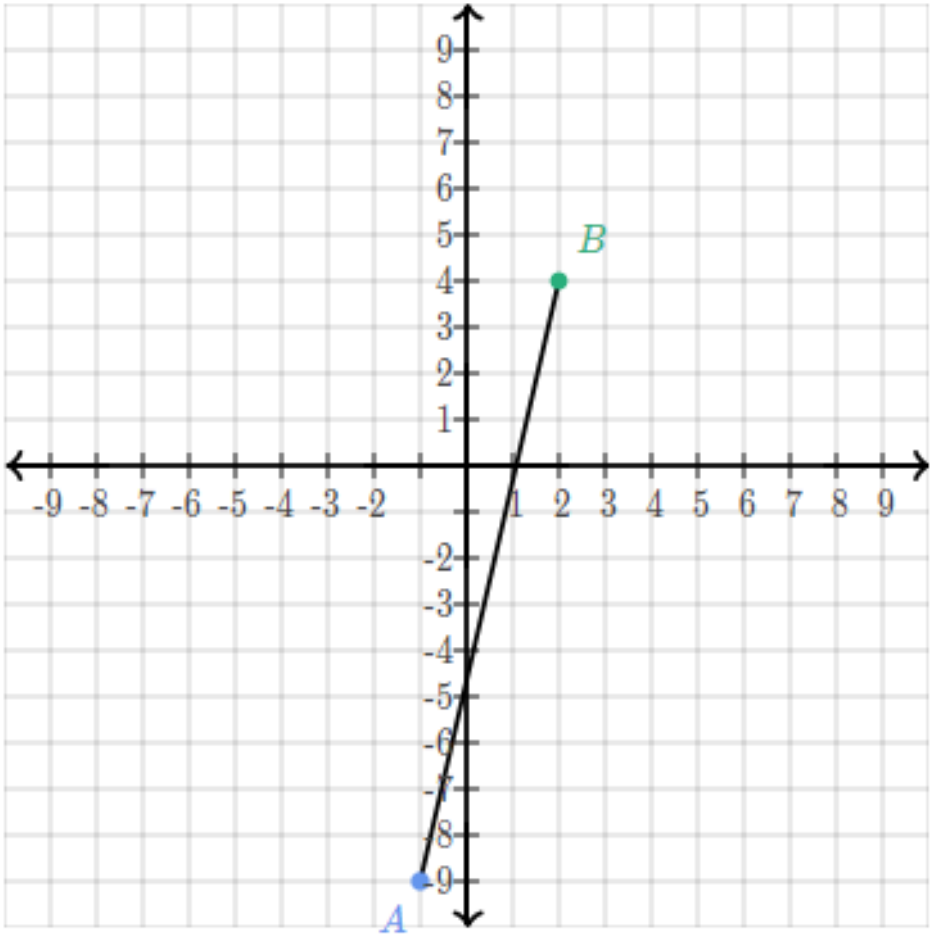
- The Midpoint Formula is:

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

Apr 30-8:15 AM

Point A is at $(-1, -9)$ and point B is at $(2, 4)$.

What is the midpoint of line segment $\overline{AB}$?

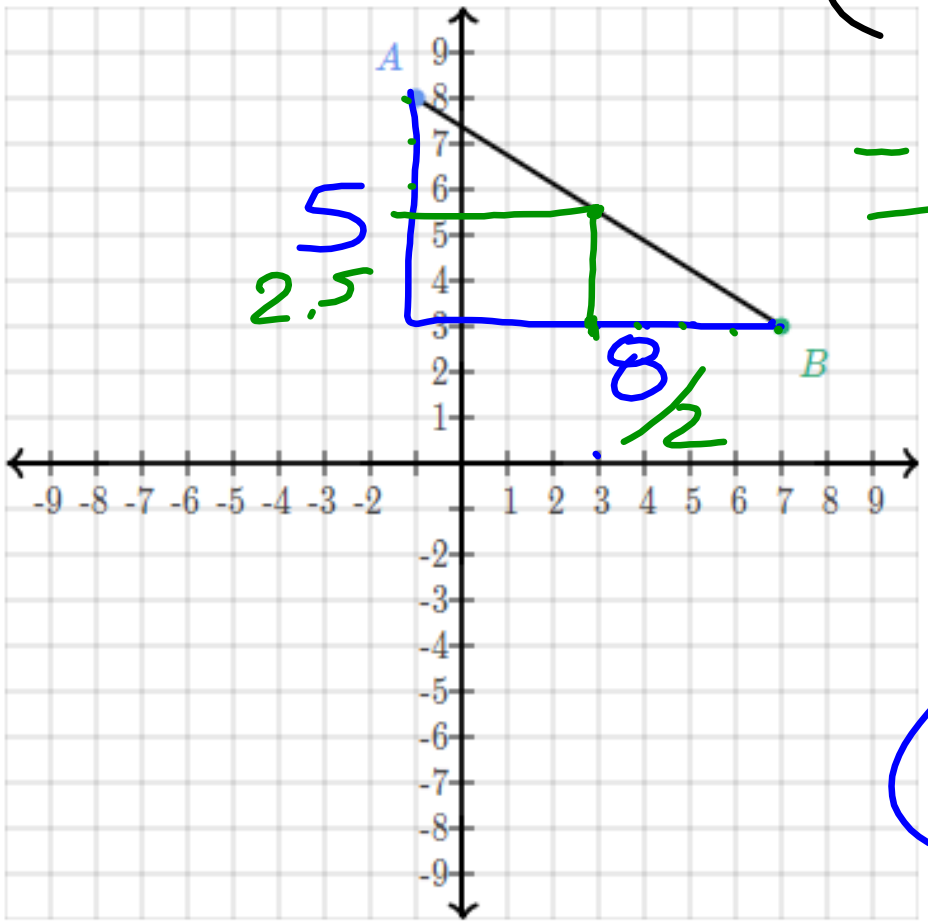


(,)

Apr 30-8:34 AM

Point A is at $(-1, 8)$ and point B is at $(7, 3)$.

What is the midpoint of line segment $\overline{AB}$?



$\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$

$\frac{-1+7}{2}, \frac{8+3}{2}$

5

2.5

8½

$\frac{6}{2}, \frac{11}{2}$

$(3, 5.5)$

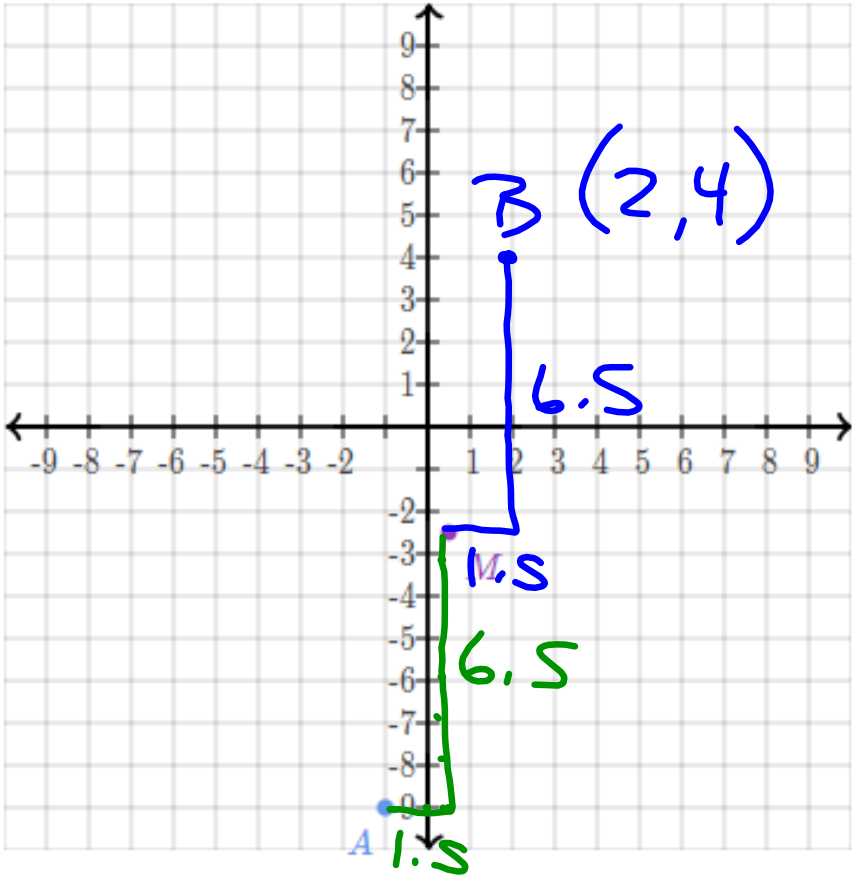
(3, 5.5)

Apr 30-8:36 AM

Point A is at $(-1, -9)$ and point M is at $(0.5, -2.5)$.

Point M is the midpoint of point A and point B.

What are the coordinates of point B?



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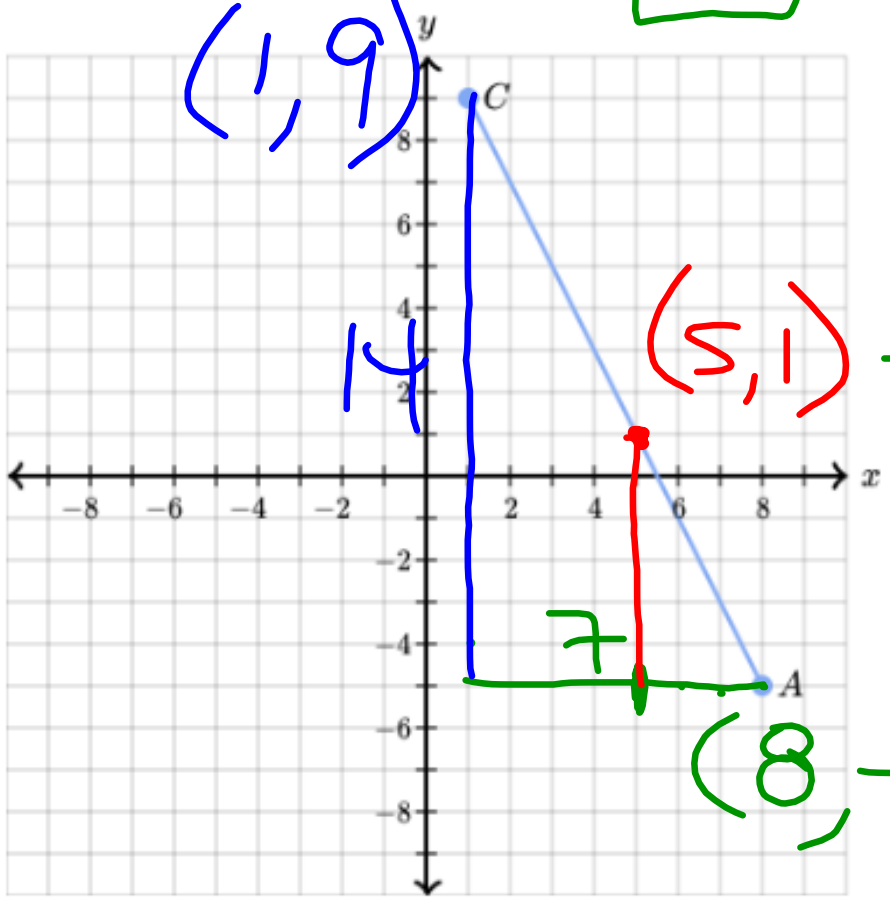
Apr 30-8:34 AM

Dividing Line Segments

Find the point B on $\overline{AC}$ such that the ratio of AB to BC is $3:4$.



$B = (\square, \square)$

(1, 9)

14

7

(5, 1)

(8, −5)

Ratio

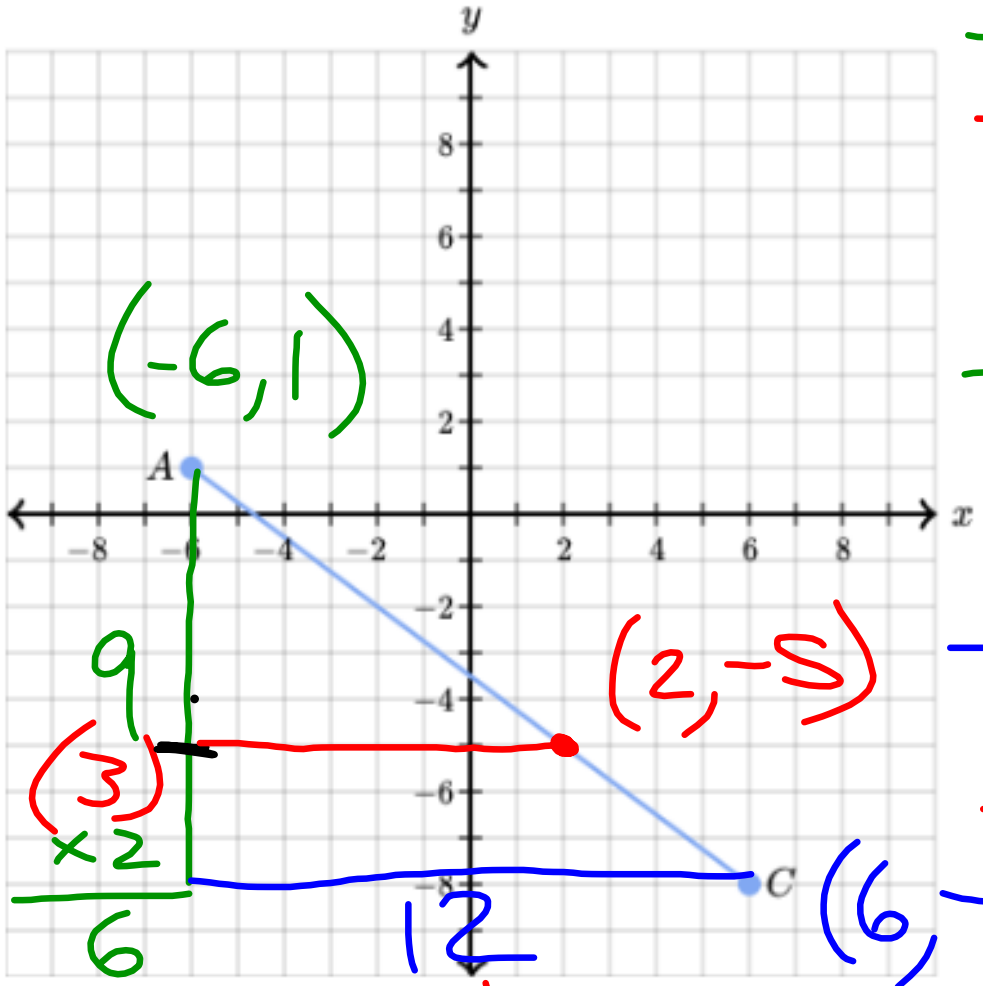
3 + 4 = 7

AB BC

- Start @ A
- go 3 spaces
- go up until you hit the line

Apr 30-8:15 AM

Find the coordinates of point B on $\overline{AC}$ such that AB is $\frac{2}{3}$ of AC.



$B = (\square, \square)$

(-6,1)

9

(3)

x2

6

(2,-5)

12

(4)x2=8

(6,-8)

Fraction

-Look @ denom.

3

-Sides of △ should be multiples of 3

- Start @ A count 6 spaces

-Draw line to blue line

Apr 30-8:55 AM

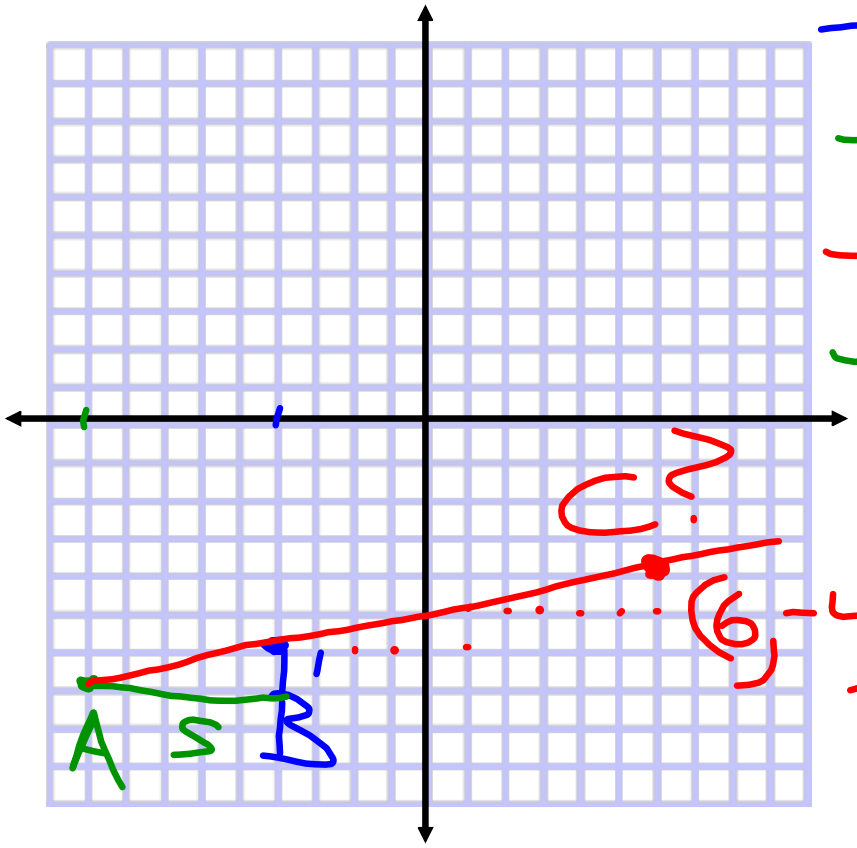
A, B, and C are collinear, and B is between A and C. The ratio of AB to BC is 1 : 2.

If A is at $(-9, -7)$ and B is at $(-4, -6)$, what are the coordinates of point C?

$C = (6, -4)$

No End Point

- Draw graph
- Draw triangle
- Count
- Duplicate △ 2 more times



Apr 30-8:58 AM

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

May 8-11:32 AM

A, B, and C are collinear, and B is between A and C. The ratio of AB to AC is $3 : 4$.

If A is at $(-8, 1)$ and B is at $(-2, -2)$, what are the coordinates of point C?

$C = (\square, \square)$

Apr 30-9:01 AM

Skills You Should Be Working on:

1. Distance Between Two Points
2. Midpoint Formula
3. Divide Line Segments

Oct 3-6:56 AM