

Name: _____

Lesson Guide

This lesson guide accompanies the following video lesson:



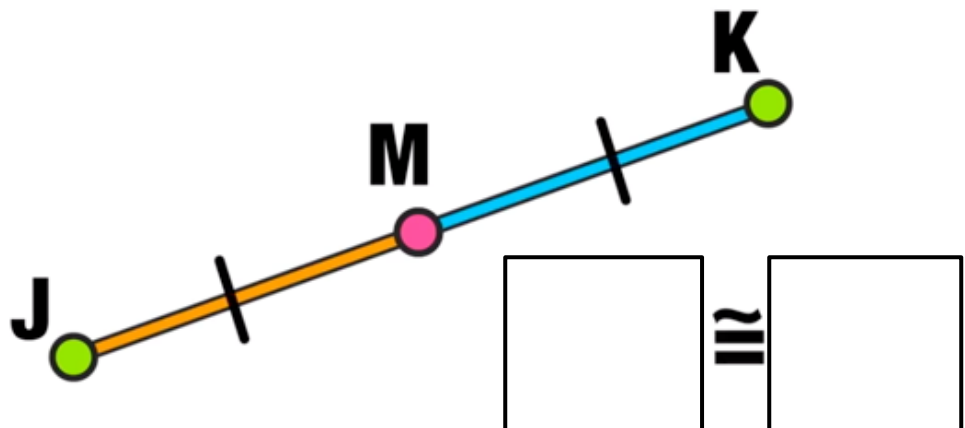
Midpoint Formula

► Key Questions and Info:

What is a midpoint?

A midpoint cuts a line segment into two congruent _____.

In the diagram below, point M is the _____ of \overline{JK}



► KEY FORMULA

A midpoint is a _____ with (x,y) coordinates.

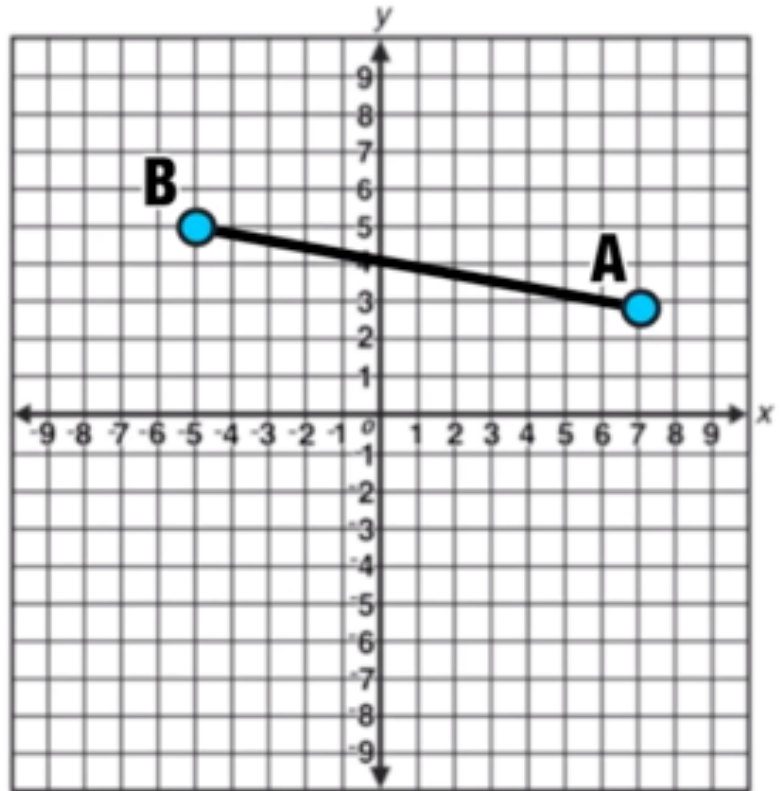
Midpoint Formula

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

► **Example 01:**

\overline{AB} has endpoints at (7,3) and (-5,5). Plot point M, the midpoint of \overline{AB} .

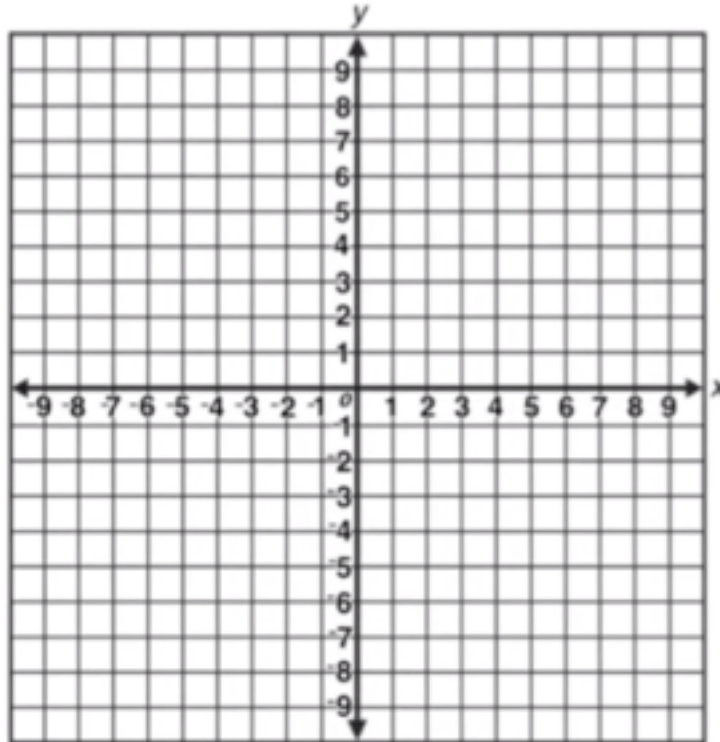
$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$



My Answer = _____

► **Example 02:**

**\overline{TN} has a midpoint at $(-3, -4)$.
If T has coordinates $(-6, -9)$,
find the coordinates of N .**



My Answer = _____

► **Example 03: Your Turn!**

Find the coordinates of the midpoint of line segment with given endpoints (round your answer to the nearest tenths decimal place)

1) $(8, 2), (-8, 0)$

2) $(-2, -1), (2, 0)$

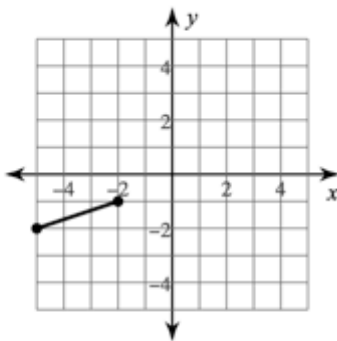
3) $(-3, -4), (0, -2)$

4) $(-2, 7), (-8, 3)$

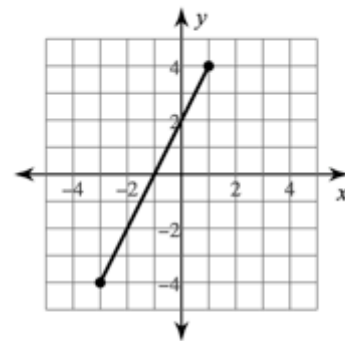
5) $(-6, 8), (2, -8)$

6) $(0, -6), (-4, -7)$

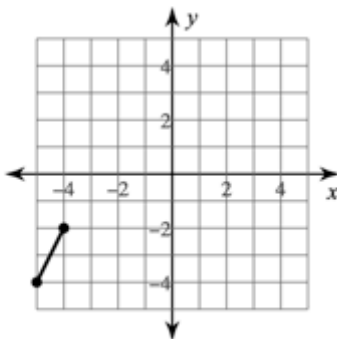
7)



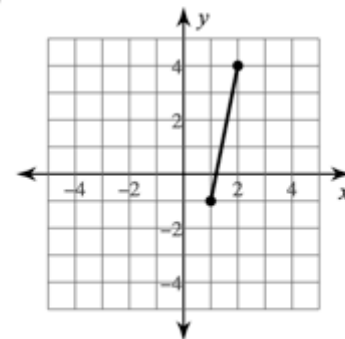
8)



9)



10)



ANSWER KEY

1.) $M(1,4)$

2.) $N(0,1)$

3.) Your Turn!

1) $\left(5\frac{1}{2}, 3\right)$

2) $\left(-4\frac{1}{2}, 5\right)$

3) $\left(-5\frac{1}{2}, -3\right)$

4) $\left(-\frac{1}{2}, 1\frac{1}{2}\right)$

5) $\left(2, 1\frac{1}{2}\right)$

6) $(2, 3)$

7) $(-3.5, -1.5)$

8) $(-1, 0)$

9) $(-4.5, -3)$

10) $(1.5, 1.5)$