

PAP Geometry - HW 1.3 - Midpoints and Bisectors

Match each definition to the corresponding term.

- a. a line, line segment, or ray that divides a line segment into two line segments of equal measure
- b. a basic geometric construction used to locate the midpoint of a line segment
- c. a point exactly halfway between the endpoints of a line segment
- d. $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

- ___ 1. midpoint
- ___ 2. Midpoint Formula
- ___ 3. segment bisector
- ___ 4. bisecting a line segment

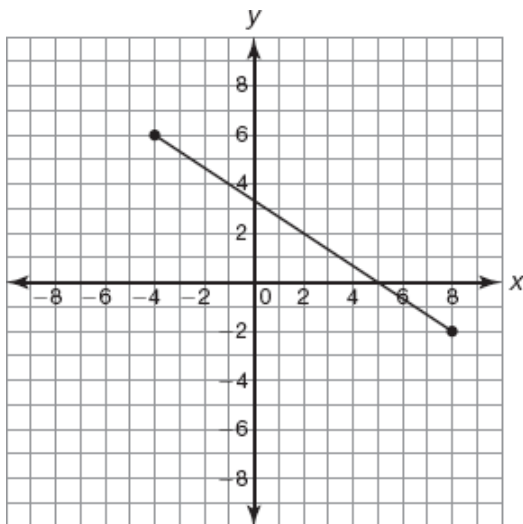
Determine the midpoint of a line segment with each set of given endpoints.

5. $(-10, -1)$ and $(0, 4)$

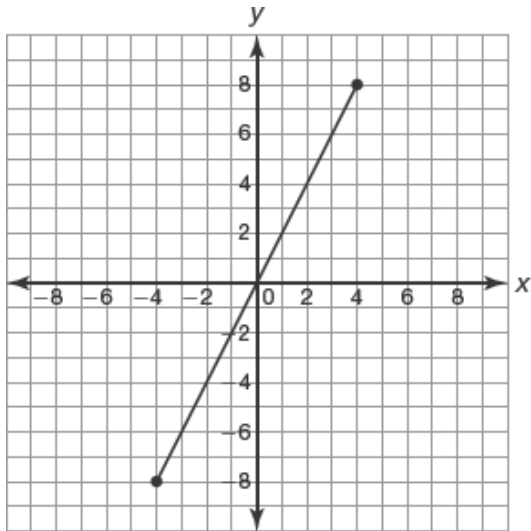
6. $(-2, 7)$ and $(-8, -9)$

Determine the midpoint of the given line segment on each coordinate plane using the Midpoint Formula.

7.

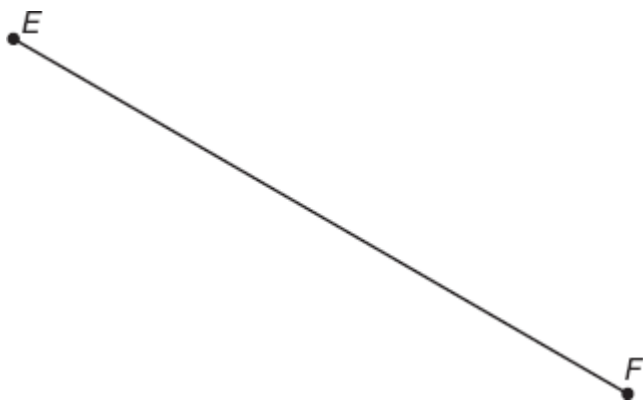


8.

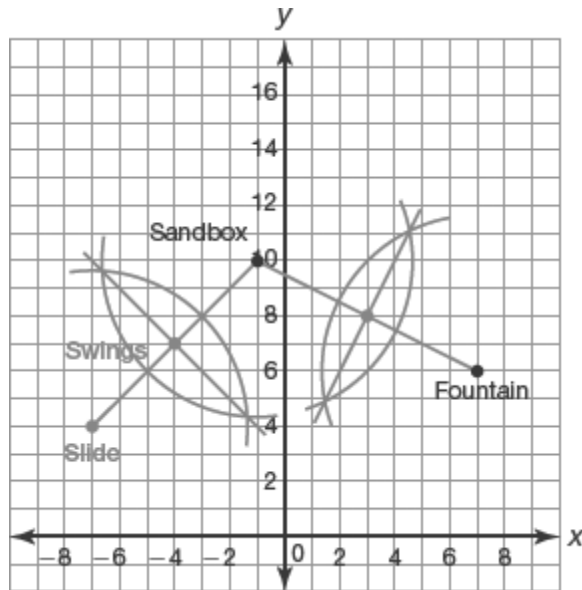


Locate the midpoint of each line segment using construction tools and label it point *M*.

9.



The grid shows the locations of a sandbox and a fountain in a park. Each grid square represents a square that is one meter long and one meter wide.



10. Calculate the distance between the sandbox and the fountain.

11. You decide to meet your friend halfway between the fountain and sandbox.
 - a. Calculate the midpoint of the line segment that passes through the point representing the sandbox and the point representing the fountain. Then, plot the point.

 - b. Verify your calculations in part (a) by constructing the midpoint of the line connecting the sandbox and the fountain.

12. The swings are located at $(-4, 7)$, which is halfway between the sandbox and the slide.
 - a. Plot and label the point representing the swings.

 - b. Calculate the location of the slide. Show your work. Then, plot and label the point representing the slide.

 - c. Verify your calculations in part (b) by constructing the midpoint of the line connecting the sandbox and the slide.

13. B is the midpoint of \overline{AC} . $AC = 100$. $AB = x + y$. $BC = 3x - 2y$. Find x and y .

14. Use the given endpoint R (8, 0) and the midpoint M (4, -5) of \overline{RS} to find the coordinates of the other endpoint S.

15. Find the midpoint of point O (4g, -7c) and point M (-8g, -9c)

