

## Questions on lesson 1.2?

Look over Lesson 1.2's

homework, we will be taking our  
content mastery quiz soon!

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

12. Calculate the distance between each pair of points. Round your answer to the nearest tenth if necessary. Show all your work.

$x_1, y_1, x_2, y_2$

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

b. (-6, 4) and (2, -8)

$$d = \sqrt{(3-1)^2 + (7-2)^2}$$

$$d = \sqrt{(2)^2 + (5)^2}$$

$$d = \sqrt{4 + 25}$$

$$d = \sqrt{29}$$

$$d = 5.4$$

$$d = \sqrt{(2 - (-6))^2 + (-8 - 4)^2}$$

$$d = \sqrt{(8)^2 + (-12)^2}$$

$$d = \sqrt{64 + 144}$$

$$d = \sqrt{208}$$

$$d = 14.4$$

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

c.  $x_1, y_1$   $x_2, y_2$   $(-5, 2)$  and  $(-6, 10)$

$$d = \sqrt{(-6 - (-5))^2 + (10 - 2)^2}$$

$$d = \sqrt{(-1)^2 + (8)^2}$$

$$d = \sqrt{1 + 64}$$

$$d = \sqrt{65}$$

$$d = 8.1$$

d.  $(-1, -3)$  and  $(-5, -2)$

$$d = \sqrt{(-5 - (-1))^2 + (-2 - (-3))^2}$$

$$d = \sqrt{(-4)^2 + (1)^2}$$

$$d = \sqrt{16 + 1}$$

$$d = \sqrt{17}$$

$$d = 4.1$$

## Content Mastery Quiz #3

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \quad \text{Lesson 1.2}$$

\*you will probably want a calculator\*

\*\*Show ALL work to receive full points\*\*

Find the distance between the two points given. Round to one decimal place.

1) (3,4) and (5,2)

2) (4, -6) and (2,3)

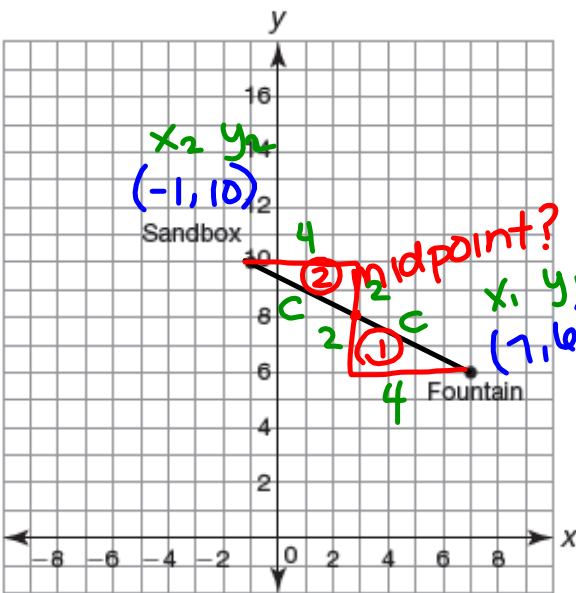
1.3

Stuck in the Middle  
Midpoints and Bisectors

NOT IN BOOK

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.

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



$$d = \sqrt{(-1-7)^2 + (10-6)^2}$$

$$d = \sqrt{(-8)^2 + (4)^2}$$

$$d = \sqrt{64 + 16}$$

$$d = \sqrt{80}$$

$$d = 8.9$$

$$d \div 2 = 8.9 \div 2 = \underline{4.45}$$

①  $2^2 + 4^2 = c^2$   
 $4 + 16 = c^2$   
 $4.4 \approx \sqrt{20} = c$

②  $2^2 + 4^2 = c^2$

mdpt.  
formula

$$\left( \frac{-1+7}{2}, \frac{10+6}{2} \right)$$

$$\left( \frac{6}{2}, \frac{16}{2} \right)$$

$$(3, 8)$$

## PG.39 IN YOUR BOOK



The coordinates of the points that you determined in Questions 5 and 7 are *midpoints*.

A midpoint is a point that is exactly halfway between two given points. The calculations you performed can be summarized by the *Midpoint Formula*.

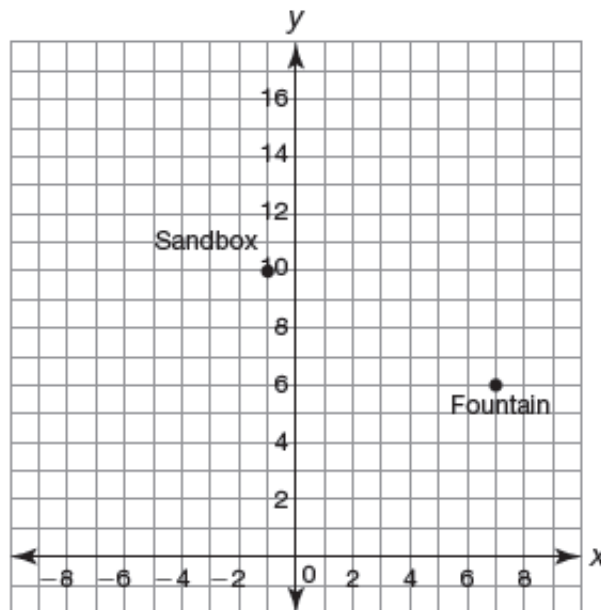
The *Midpoint Formula* states that if  $(x_1, y_1)$  and  $(x_2, y_2)$  are two points on the coordinate plane, then the midpoint of the line segment that joins these two points is

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

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

STILL NOT IN YOUR BOOK

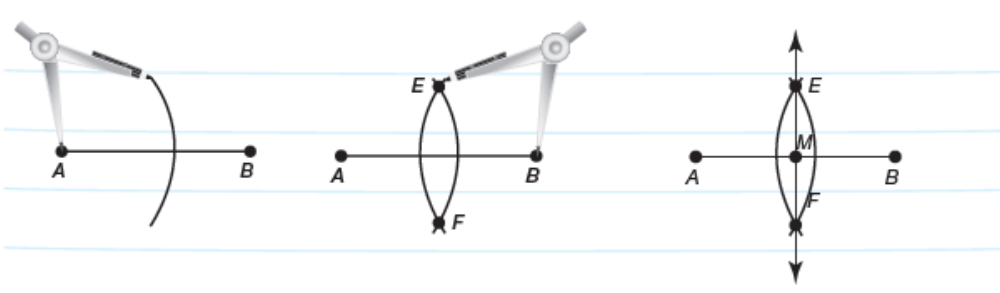
2. You decide to meet your friend halfway between the fountain and sandbox.
  - a. Calculate the midpoint of the line segment that passes through the point representing the sandbox and the point representing the fountain. Then, plot the point.



PG.46 IN YOUR BOOK

# Constructing a segment bisector (and midpoint)

You can use a compass and straightedge to construct a segment bisector.

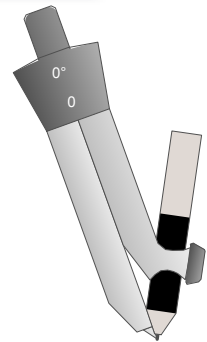
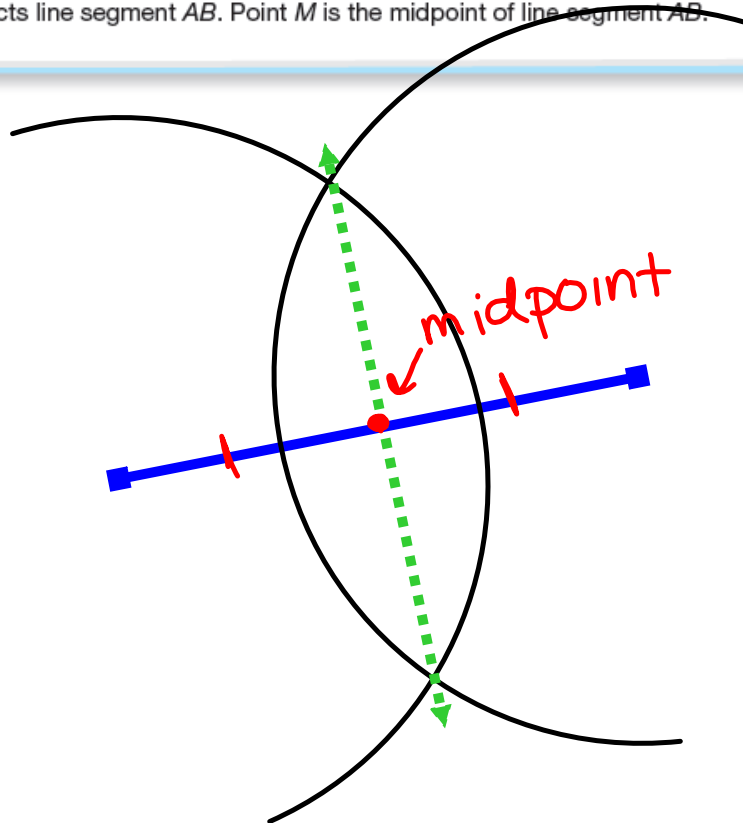


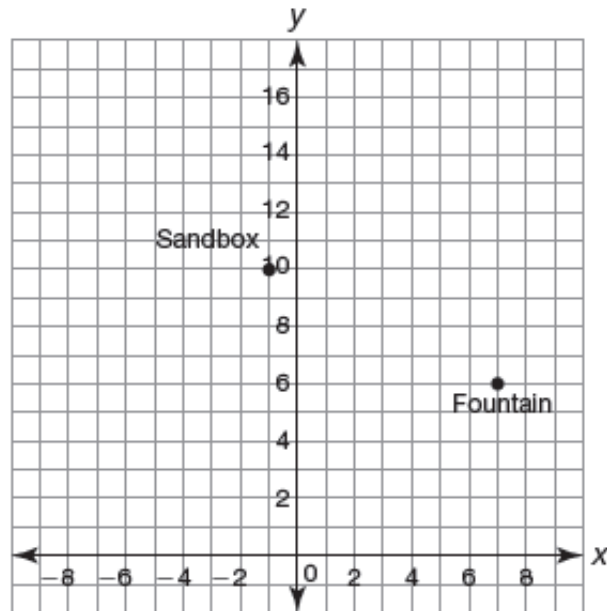
**Construct an Arc**  
Open the radius of the compass to more than half the length of line segment  $AB$ . Use endpoint  $A$  as the center and construct an arc.

**Construct Another Arc**  
Keep the compass radius and use point  $B$  as the center as you construct an arc. Label the points formed by the intersection of the arcs point  $E$  and point  $F$ .

**Construct a Line**  
Connect points  $E$  and  $F$ . Line segment  $EF$  is the segment bisector of line segment  $AB$ . The point  $M$  represents the midpoint of  $\overline{AB}$ .

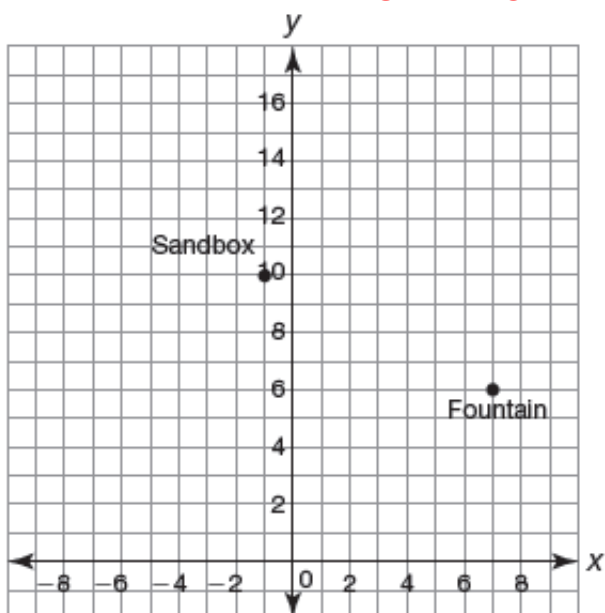
Line  $EF$  bisects line segment  $AB$ . Point  $M$  is the midpoint of line segment  $AB$ .



**STILL NOT IN YOUR BOOK****here's the rest of #2 that wasn't in your book before**

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



**STILL NOT IN YOUR BOOK**

3. 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.

Homework

Finish lesson 1.3