

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.

a. $(1, 2)$ and $(3, 7)$ x^2 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. x_1, y_1 x_2, y_2
(-1, -3) and (-5, -2)

$$d = \sqrt{(-5 - (-1))^2 + (-2 - (-3))^2}$$
$$d = \sqrt{(-4)^2 + (1)^2}$$
$$d = \sqrt{16 + 1}$$
$$d = \sqrt{17}$$
$$d = 4.1$$

1.3

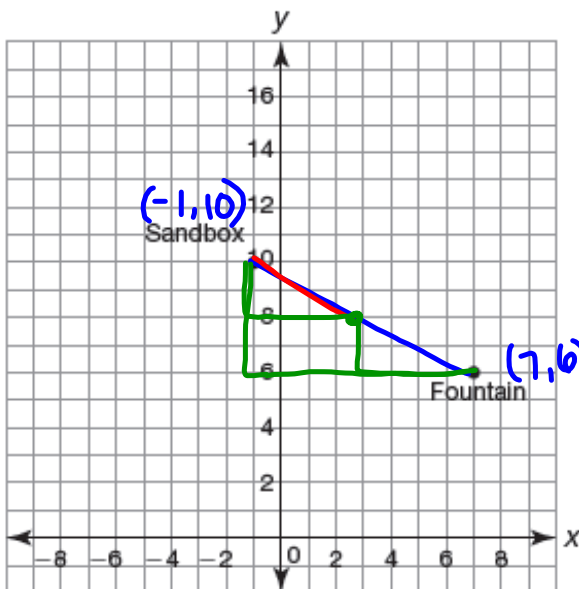
Stuck in the Middle

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.



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

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

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

$$d = \sqrt{80}$$

$$d = 8.9 \text{ m}$$

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

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

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

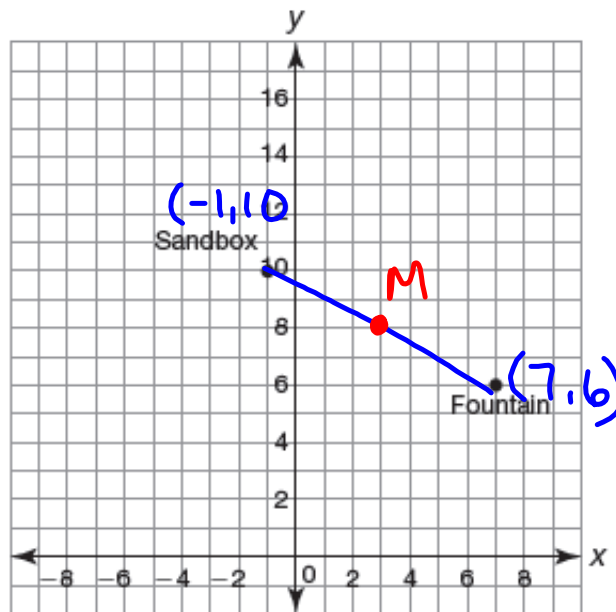
STILL NOT IN YOUR BOOK

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.

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

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

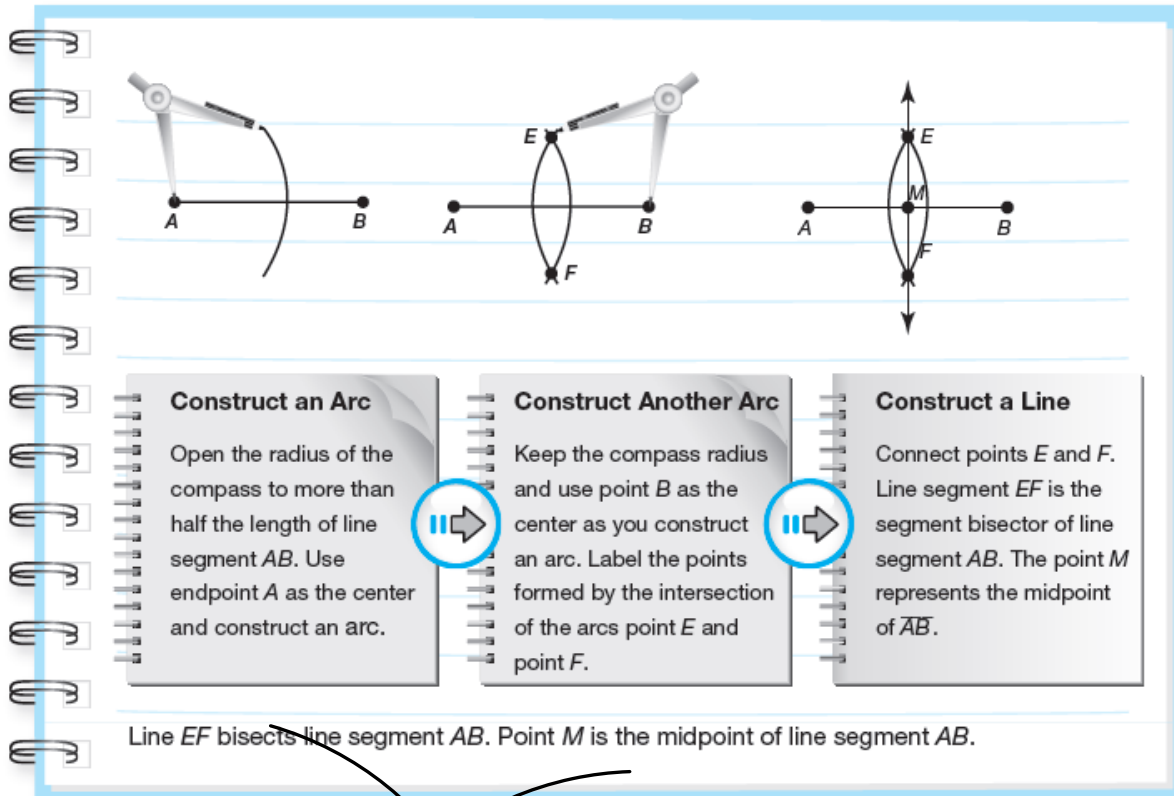
$$(3, 8)$$



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.

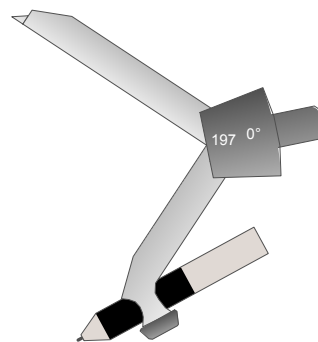
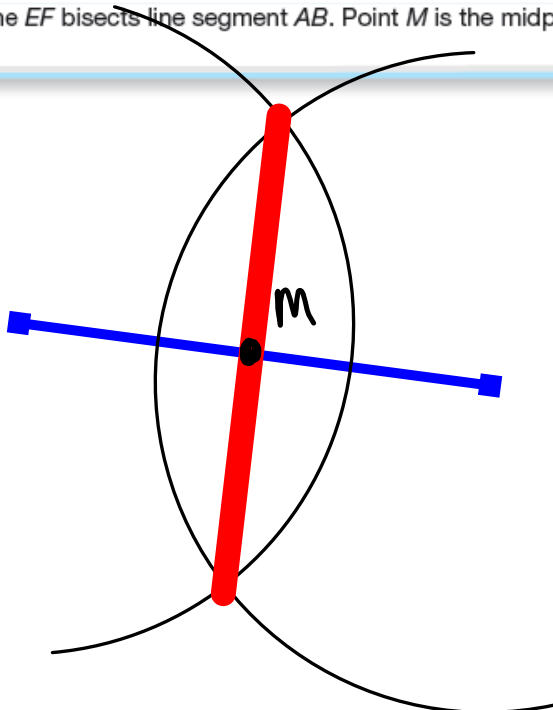
Construct Another Arc

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 .

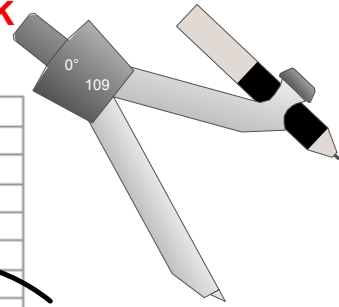
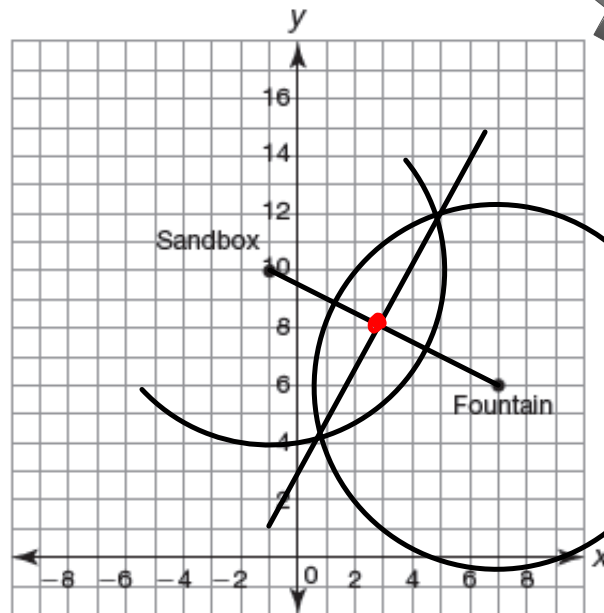
Construct a Line

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 .



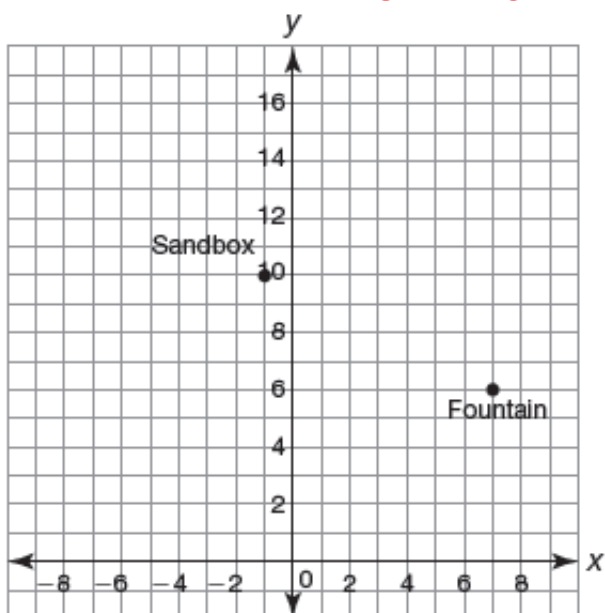
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SKIP problem 7
4-7

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.
- Plot and label the point representing the swings.
 - Calculate the location of the slide. Show your work. Then, plot and label the point representing the slide.
 - Verify your calculations in part (b) by constructing the midpoint of the line connecting the sandbox and the slide.

Homework

Finish lesson 1.3