Questions on lesson 1.2?

Look over Lesson 1.2's homework, we will be taking our content mastery quiz soon!

Feb 27-8:47 AM

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

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

a. $\overset{x_1\ \ y_1\ \ \ \ x_2\ y_2}{(1, 2)}$ and (3, 7)   b. $\overset{x_1\ \ y_1\ \ \ \ x_2\ y_2}{(-6, 4)}$ and (2, -8)

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

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

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

$$d = \sqrt{29}$$

$$d = 5.4$$

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

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

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

$$d = \sqrt{208}$$

$$d = 14.4$$

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

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

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

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

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

$$d = \sqrt{65}$$

$$d = 8.1$$

d. $\overset{x_1\, y_1}{(-1, -3)}$ and $\overset{x_2\, y_2}{(-5, -2)}$

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

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

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

$$d = \sqrt{17}$$

$$d = 4.1$$
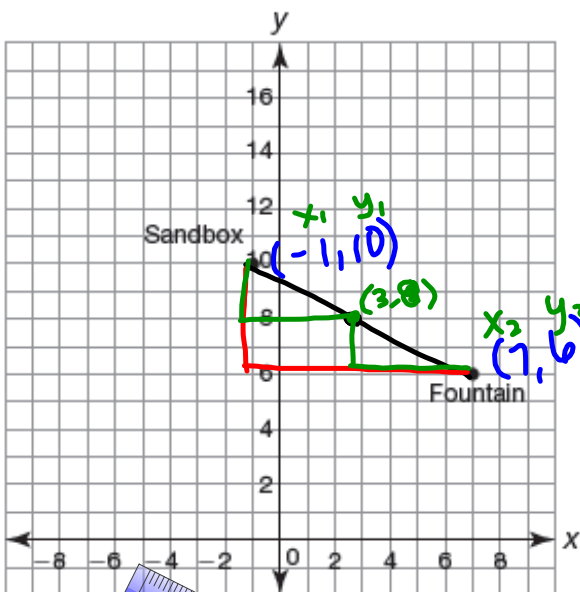
Sep 3-11:25 AM

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.

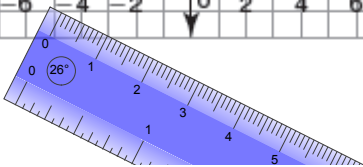**1.** Calculate the distance between the sandbox and the fountain.

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

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

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

$$d = \sqrt{80}$$

$$d = 8.9$$

Sandbox x_1 y_1 $(-1,10)$

$(3,8)$

x_2 y_2

$(7,6)$

Fountain

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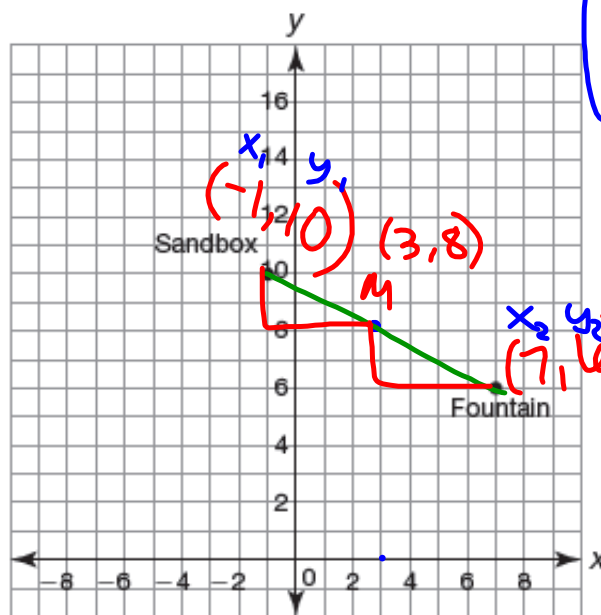
The **Midpoint Formula** states that if (x_1, y_1) and (x_2, y_2) are two points on the coordinate plane, then the midpoint of the line segment that joins these two points is

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

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

STILL NOT IN YOUR BOOK

x-value of mdpt.

y value of mdpt.

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.

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

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

$$(3, 8)$$

$(-1, 10)$ $(3, 8)$ M

$(7, 6)$

Sandbox   Fountain

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*.

mdpt.

Aug 24-1:53 PM

6
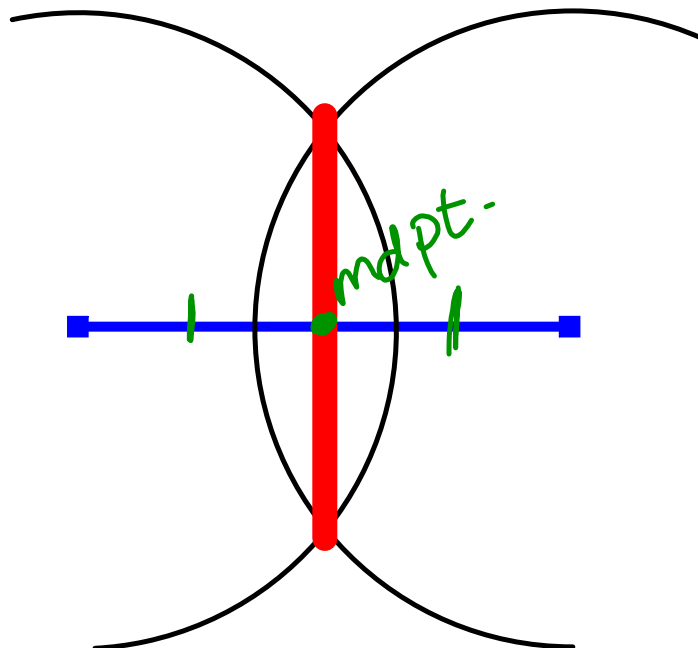
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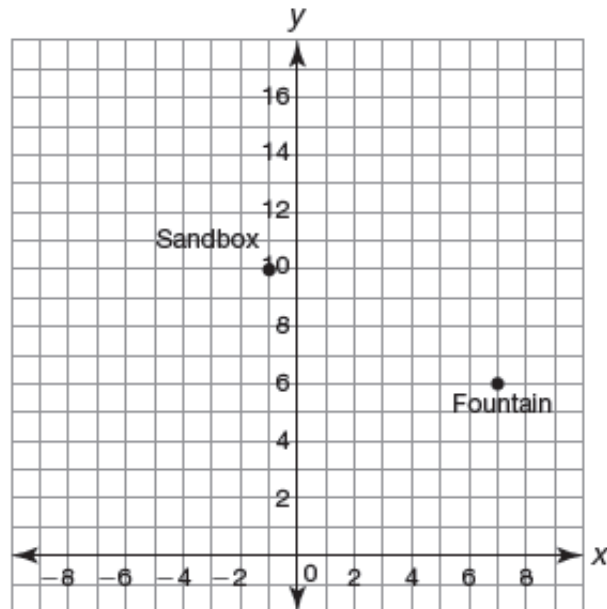
here's the rest of #2 that wasn't in your book before

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

Aug 24-1:54 PM

STILL NOT IN YOUR BOOK
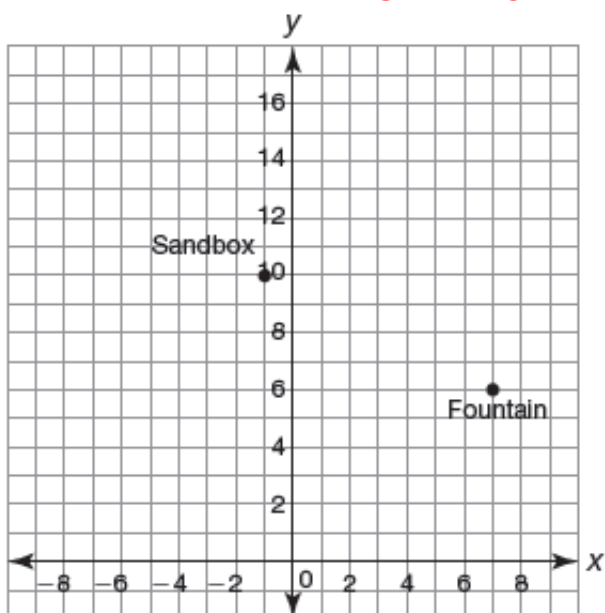
3. The swings are located at $(-4, 7)$, which is halfway between the sandbox and the slide.

   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.

Sep 3-8:25 AM

Homework

Finish lesson 1.3

Aug 24-2:00 PM