

**Lesson Objectives** (p. 43):

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**Vocabulary**

1. Coordinate plane (p. 43): \_\_\_\_\_

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2. Leg (p. 45): \_\_\_\_\_

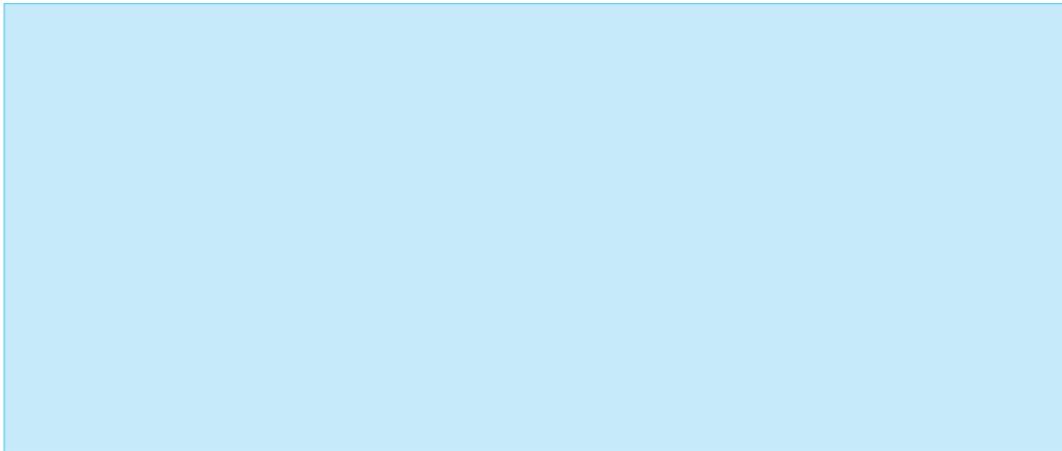
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3. Hypotenuse (p. 45): \_\_\_\_\_

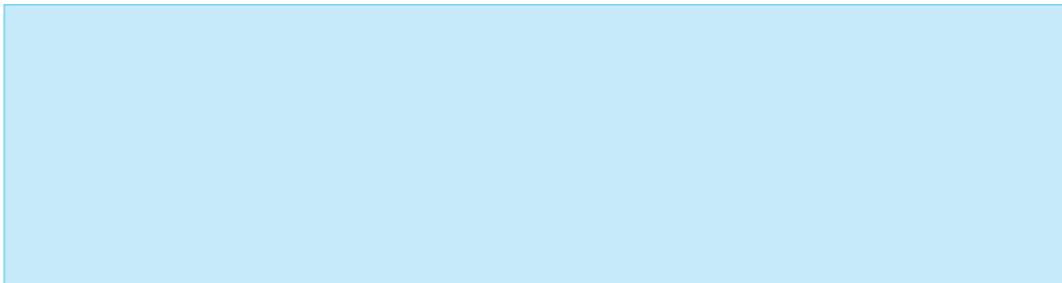
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**Key Concepts**

4. Midpoint Formula (p. 43):



5. Distance Formula (p. 44):



## Lesson Objectives (p. 43):

develop and apply the formula for midpoint; use the Distance Formula and the Pythagorean Theorem to find the distance between two points.

## Vocabulary

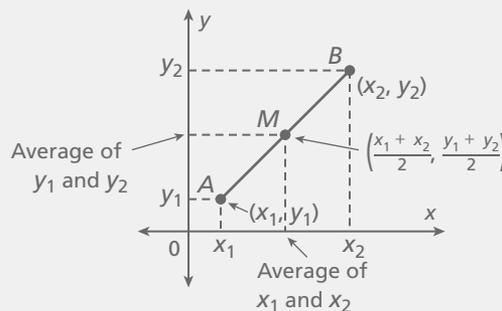
1. Coordinate plane (p. 43): a plane that is divided into four regions by a horizontal line (x-axis) and vertical line (y-axis).
2. Leg (p. 45): the two sides that form the right angle in a right triangle.
3. Hypotenuse (p. 45): the side of a right triangle across from the right angle.

## Key Concepts

4. Midpoint Formula (p. 43):

The midpoint  $M$  of  $\overline{AB}$  with endpoints  $A(x_1, y_1)$  and  $B(x_2, y_2)$  is found by

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

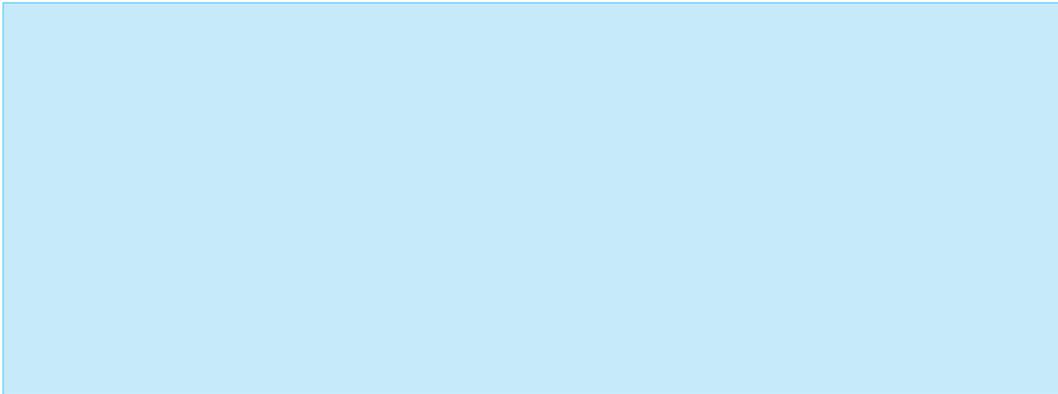


5. Distance Formula (p. 44):

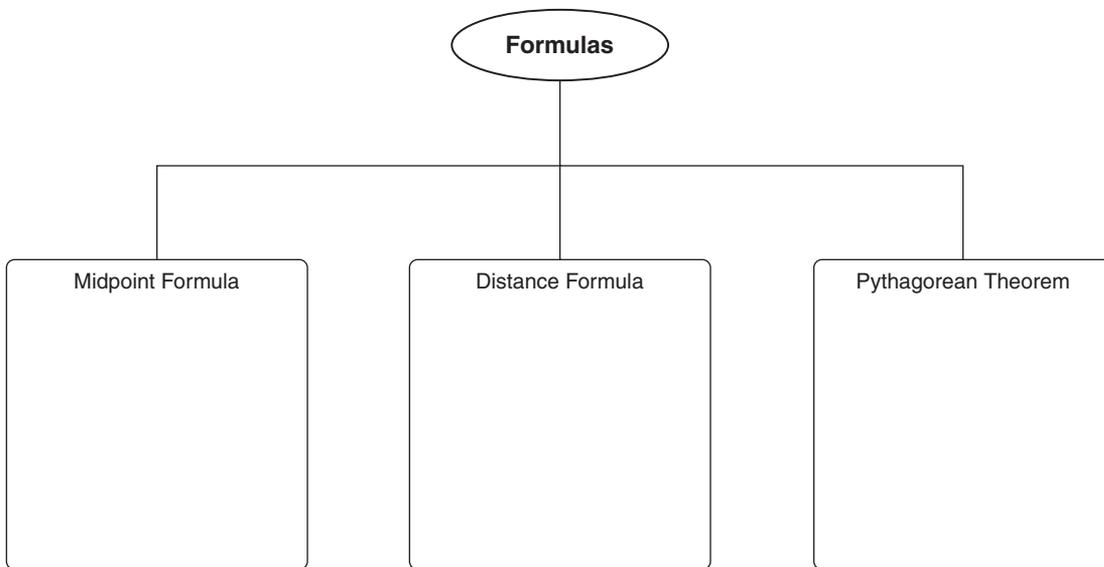
In a coordinate plane, the distance  $d$  between two points  $(x_1, y_1)$  and  $(x_2, y_2)$  is

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

6. Pythagorean Theorem (p. 45):



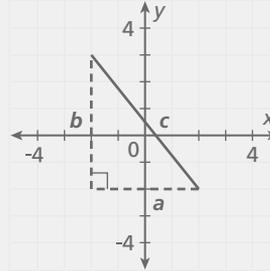
7. **Get Organized** In each box, write a formula and make a sketch that illustrates the formula. (p. 46).



6. Pythagorean Theorem (p. 45):

In a right triangle, the sum of the squares of the lengths of the legs is equal to the square of the length of the hypotenuse.

$$a^2 + b^2 = c^2$$



7. Get Organized In each box, write a formula and make a sketch that illustrates the formula. (p. 46).

