LESSON
10-2
Algebraic Representations of Dilations
Practice and Problem Solving: A/B

Use triangle *ABC* for Exercises 1–4.

1. Give the coordinates of each vertex of △*ABC*.

   *A*_____ *B*_____ *C*_____

2. Multiply each coordinate of the vertices of △*ABC* by 2
   to find the vertices of the dilated image △*A'B'C'*.

   *A'*_____ *B'*_____ *C'*_____

3. Graph △*A'B'C'*.

4. Complete this algebraic rule to describe the dilation.

   $(x, y) \rightarrow$ _____
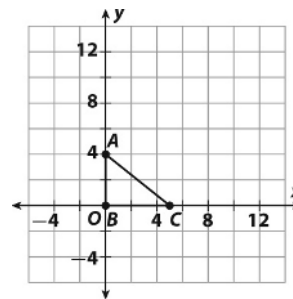
Use the figures at the right for Exercises 5–7.

5. Give the coordinates of each vertex of figure *JKLM*.

   *J*_____ *K*_____ *L*_____

   *M*_____ *N*_____

6. Give the coordinates of each vertex of figure *J'K'L'M'*.

   *J'*_____ *K'*_____ *L'*_____

   *M'*_____ *N'*_____

7. Complete this algebraic rule to describe the dilation.

   $(x, y) \rightarrow$ _____
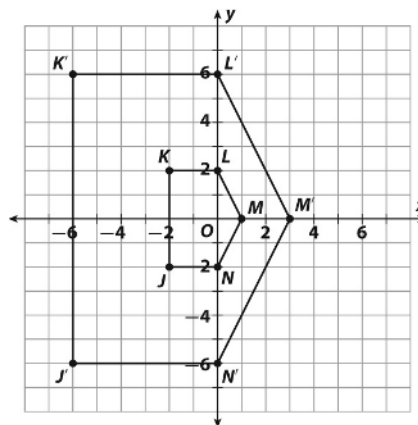
Li made a scale drawing of a room. The scale used was 5 cm = 1 m.
The scale drawing is the preimage and the room is the dilated image.

8. What is the scale in terms of centimeters to centimeters?

   _____

9. Complete this algebraic rule to describe the dilation from the scale
   drawing to the room.

   $(x, y) \rightarrow$ _____

10. The scale drawing measures 15 centimeters by 20 centimeters.
    What are the dimensions of the room?
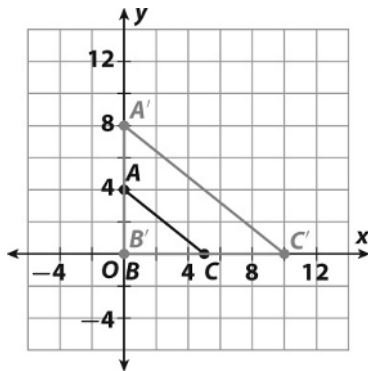
    _____

Reading Strategies
1. no
2. yes

Success for English Learners
1. enlargement
2. reduction

LESSON 10-2

Practice and Problem Solving: A/B
1. A (0, 4), B (0, 0), C (5, 0)
2. A'(0, 8), B'(0, 0), C'(10, 0)
3.

4. (2x, 2y)
5. J(−2, −2), K(−2, 2), L(0, 2), M(1, 0), N(0, −2)
6. J'(−6, −6), K'(−6, 6), L'(0, 6), M'(3, 0), N'(0, −6)
7. (3x, 3y)
8. 1 cm = 20 cm
9. (20x, 20y)
10. 300 cm by 400 cm or 3 m by 4 m

Practice and Problem Solving: C
1. $\left(1\frac{1}{2}x,\ 1\frac{1}{2}y\right)$
2. $\left(\frac{1}{4}x,\ \frac{1}{4}y\right)$
3. (−3, −1)
4. (9x, 9y)
5. 45 in. by 36 in.
6. $\left(-4\frac{1}{2},\ 4\frac{1}{2}\right), \left(3,\ 4\frac{1}{2}\right), \left(3,\ -1\frac{1}{2}\right),$
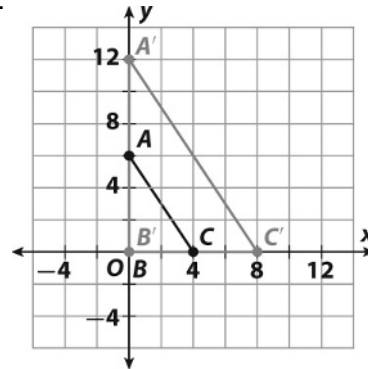
$\left(-4\frac{1}{2},\ -1\frac{1}{2}\right)$

7. $7\frac{1}{2}$ in. by 6 in.
8. $67\frac{1}{2}$ in. by 54 in.
9. $22\frac{1}{2}$ in. by 18 in.

Practice and Problem Solving: D
1. A (0, 6), B (0, 0), C (4, 0)
2. A'(0, 12), B'(0, 0), C'(8, 0)
3.

4. (2x, 2y)
5. J(−2, −2), K(−2, 2), L(2, 2), M(2, −2)
6. J'(−6, −6), K'(−6, 6), L'(6, 6), M'(6, −6)
7. (3x, 3y)
8. 1 in. = 12 in.
9. (12x, 12y)
10. 120 in. by 144 in. or 10 ft by 12 ft

Reteach
1. A(1, 2) → A'(2 • 1, 2 • 2) or A'(2, 4)
   B(2, 0) → B'(2 • 2, 2 • 0) or B'(4, 0)
   C(3, 3) → C'(2 • 3, 2 • 3) or C'(6, 6)