Answer Key · Lesson 7.5: Dilations

School Launch · Geometry · Unit 7 · Worksheet A · for the parent

Key

1. $(-15, 12), (12, 15), (12, -18)$

Dilate $(-5, 4), (4, 5), (4, -6)$ by scale factor 3 centered at the origin.

2. $(6, 8), (6, 6), (-4, 8)$

Dilate $(3, 4), (3, 3), (-2, 4)$ by scale factor 2 centered at the origin.

3. $(9, -9), (0, 0), (12, 3)$

Dilate $(3, -3), (0, 0), (4, 1)$ by scale factor 3 centered at the origin.

4. $(9, -3), (-15, 12), (0, 0)$

1. Multiply each coordinate by 3
2. $(3, -1) \to (9, -3), (-5, 4) \to (-15, 12), (0, 0) \to (0, 0)$

Dilate $(3, -1), (-5, 4), (0, 0)$ by scale factor 3 centered at the origin.

5. $(-12, 4), (-6, -12), (-10, -4)$

1. Multiply each coordinate by 2
2. $(-6, 2) \to (-12, 4), (-3, -6) \to (-6, -12), (-5, -2) \to (-10, -4)$

Dilate $(-6, 2), (-3, -6), (-5, -2)$ by scale factor 2 centered at the origin.

6. $(-9, -\frac{15}{2}), (9, \frac{3}{2}), (-3, -\frac{3}{2})$

1. Multiply each coordinate by $\dfrac{3}{2}$
2. $(-6, -5) \to (-9, -\dfrac{15}{2}), (6, 1) \to (9, \dfrac{3}{2}), (-2, -1) \to (-3, -\dfrac{3}{2})$

Dilate $(-6, -5), (6, 1), (-2, -1)$ by scale factor $\frac{3}{2}$ centered at the origin.

7. $(6, 3), (6, 0), (-18, -3)$

1. Multiply each coordinate by 3
2. $(2, 1) \to (6, 3), (2, 0) \to (6, 0), (-6, -1) \to (-18, -3)$

Dilate $(2, 1), (2, 0), (-6, -1)$ by scale factor 3 centered at the origin.

8. $(3, -19), (6, 2), (0, -4)$

1. $P' = C + 3(P - C), C = (0, 2)$
2. $(1, -5) \to (3, -19), (2, 2) \to (6, 2), (0, 0) \to (0, -4)$

Dilate $(1, -5), (2, 2), (0, 0)$ by scale factor 3 centered at $(0, 2)$.

9. $(-3, 0), (-9, -18), (-15, -6)$

1. $P' = C + 3(P - C), C = (3, 0)$
2. $(1, 0) \to (-3, 0), (-1, -6) \to (-9, -18), (-3, -2) \to (-15, -6)$

Dilate $(1, 0), (-1, -6), (-3, -2)$ by scale factor 3 centered at $(3, 0)$.

10. $(-3, -\frac{3}{2}), (-9, 6), (-\frac{9}{2}, 6)$

1. $P' = C + \dfrac{3}{2}(P - C), C = (3, 0)$
2. $(-1, -1) \to (-3, -\dfrac{3}{2}), (-5, 4) \to (-9, 6), (-2, 4) \to (-\dfrac{9}{2}, 6)$

Dilate $(-1, -1), (-5, 4), (-2, 4)$ by scale factor $\frac{3}{2}$ centered at $(3, 0)$.