Lesson 6: Dilations on the Coordinate Plane

Classwork

Exercises 1–5

1. Point \(A(7, 9)\) is dilated from the origin by scale factor \(r = 6\). What are the coordinates of point \(A'\)?

2. Point \(B(-8, 5)\) is dilated from the origin by scale factor \(r = \frac{1}{2}\). What are the coordinates of point \(B'\)?

3. Point \(C(6, -2)\) is dilated from the origin by scale factor \(r = \frac{3}{4}\). What are the coordinates of point \(C'\)?

4. Point \(D(0, 11)\) is dilated from the origin by scale factor \(r = 4\). What are the coordinates of point \(D'\)?

5. Point \(E(-2, -5)\) is dilated from the origin by scale factor \(r = \frac{3}{2}\). What are the coordinates of point \(E'\)?
Exercises 6–8

6. The coordinates of triangle \( ABC \) are shown on the coordinate plane below. The triangle is dilated from the origin by scale factor \( r = 12 \). Identify the coordinates of the dilated triangle \( A'B'C' \).
7. Figure $DEFG$ is shown on the coordinate plane below. The figure is dilated from the origin by scale factor $r = \frac{2}{3}$.

Identify the coordinates of the dilated figure $D'E'F'G'$, and then draw and label figure $D'E'F'G'$ on the coordinate plane.
8. The triangle $ABC$ has coordinates $A(3, 2)$, $B(12, 3)$, and $C(9, 12)$. Draw and label triangle $ABC$ on the coordinate plane. The triangle is dilated from the origin by scale factor $r = \frac{1}{3}$. Identify the coordinates of the dilated triangle $A'B'C'$, and then draw and label triangle $A'B'C'$ on the coordinate plane.