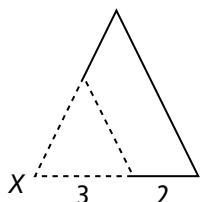Name _____ Class _____ Date _____
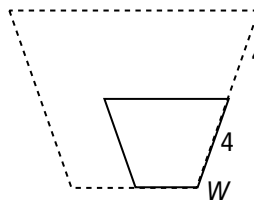
Practice

Form G

Dilations

The solid-line figure is a dilation of the dashed-line figure. The labeled point is the center of dilation. Tell whether the dilation is an enlargement or a reduction. Then find the scale factor of the dilation.
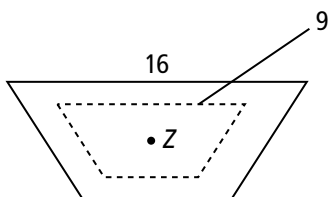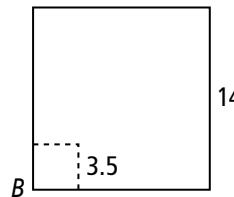
1.

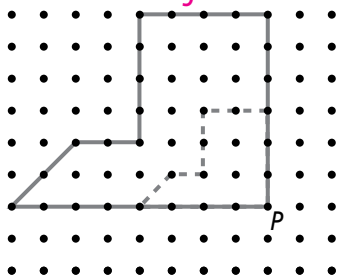enlargement; $\frac{5}{3}$

2.

reduction; $\frac{1}{2}$

3.

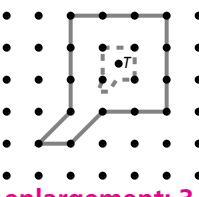enlargement; $\frac{16}{9}$
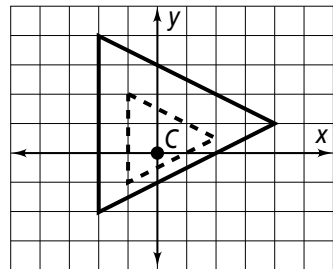
4.

enlargement; 4

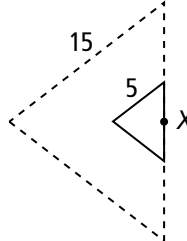**5.**

enlargement; 2

6.

enlargement; 3

7.

enlargement; 2

8.

reduction; $\frac{1}{3}$

You look at each object described in Exercises 9–11 under a magnifying glass. Find the actual dimension of each object.

 9. The image of a ribbon is 10 times the ribbon's actual size and has a width of 1 cm. **0.1 cm**

10. The image of a caterpillar is three times the caterpillar's actual size and has a width of 4 in. **$\frac{4}{3}$ in.**

11. The image of a beetle is five times the beetle's actual size and has a length of 1.75 cm. **0.35 cm**

12. $\triangle P'Q'R'$ is a dilation image of $\triangle PQR$. The scale factor for the dilation is 0.12. Is the dilation an enlargement or a reduction? **reduction**

Practice (continued)   *Form G*

Dilations

A dilation has center (0, 0). Find the image of each point for the given scale factor.

13. $X(3, 4)$; $D_7(X)$ **(21, 28)**   **14.** $P(-3, 5)$; $D_{1.2}(P)$ **(−3.6, 6)**

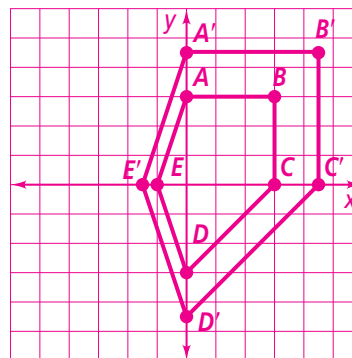**15.** $Q(0, 4)$; $D_{3.4}(Q)$ **(0, 13.6)**   **16.** $T(-2, -1)$; $D_4(T)$ **(−8, −4)**

17. $S(5, -6)$; $D_{\frac{5}{3}}(S)$ **($\frac{25}{3}$, −10)**   **18.** $M(2, 2)$; $D_5(M)$ **(10, 10)**
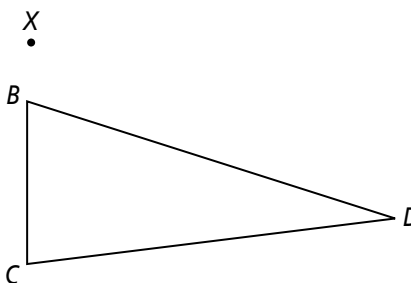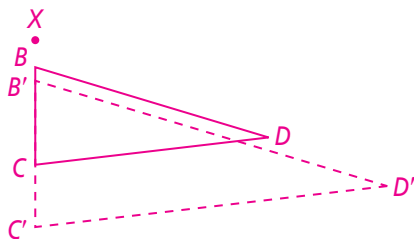
19. A square has 16-cm sides. Describe its image for a dilation with center at one of the vertices and scale factor 0.8. **The dilation image will be a square with 12.8-cm sides that shares the vertex that is the dilation center with the original square. The sides will be parallel to or along the original sides.**

20. Graph pentagon $ABCDE$ and its image $A'B'C'D'E'$ for a dilation with center $(0, 0)$ and a scale factor of 1.5. The vertices of $ABCDE$ are: $A(0, 3)$, $B(3, 3)$, $C(3, 0)$, $D(0, -3)$, $E(-1, 0)$.
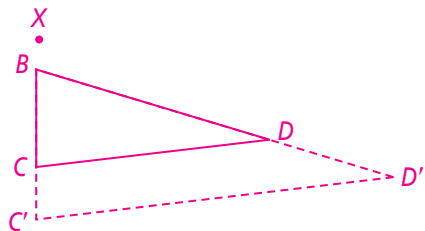

Copy $\triangle BCD$ and point X for each of Exercises 21–23. Draw the dilation image $\triangle B'C'D'$.

21. $D_{(1.5, X)}(\triangle BCD)$

22. $D_{(1.5, B)}(\triangle BCD)$ **23.** $D_{(0.8, C)}(\triangle BCD)$