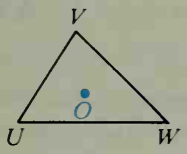
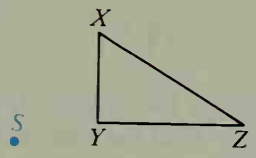
Classroom Exercises

Sketch each triangle on the chalkboard. Then sketch its image under the given dilation.

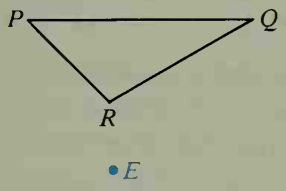
1. $D_{O,\,3}$



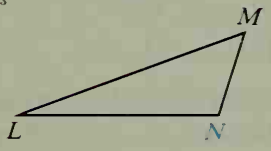
2. $D_{S,\,\frac{1}{2}}$



3. $D_{E,\,-2}$



4. $D_{N,\,-\frac{1}{3}}$

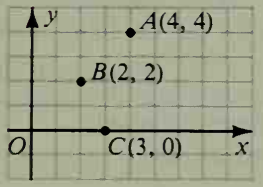


5. Find the coordinates of the images of points A, B, and C under the dilation $D_{O,\,2}$.

6. Find the image of (x, y) under $D_{O,\,2}$.

7. What dilation with center O maps A to B?

8. What dilation with center O maps C to the point $(-6, 0)$?



Exs. 5–10

9. Find the coordinates of the image of A under $D_{B,\,2}$.

10. Find the coordinates of the image of B under $D_{C,\,3}$.

11. Match each scale factor in the first column with the name of the corresponding dilation in the second column.

Scale factor	*Transformation*
$\frac{2}{5}$	Half-turn
-4	Contraction
-1	Expansion

12. Describe the dilation $D_{O,\,1}$.

13. If $\odot S$ has radius 4, describe the image of $\odot S$ under $D_{S,\,5}$ and under $D_{S,\,-1}$.

14. If point A is on line k, what is the image of line k under $D_{A,\,2}$?

15. The dilation $D_{O,\,3}$ maps P to P' and Q to Q'.

a. If $OQ = 2$, find OQ'.

b. If $PQ = 7$, find $P'Q'$.

c. If $PP' = 10$, find OP.

16. Explain how Corollary 1 follows from Theorem 14-5.

17. Explain how Corollary 3 follows from Corollaries 1 and 2.