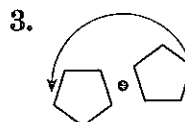
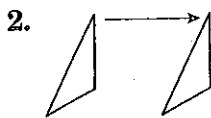
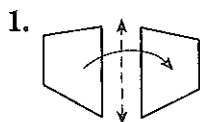


4-2

Practice

Transformations on the Coordinate Plane

Identify each transformation as a *reflection, translation, dilation, or rotation.*



For Exercises 4-6, complete parts a and b.

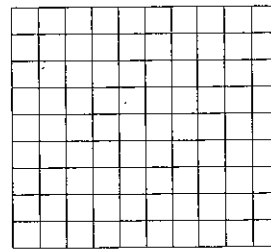
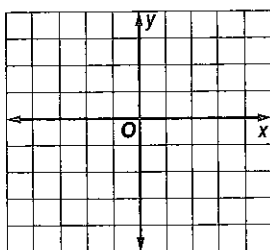
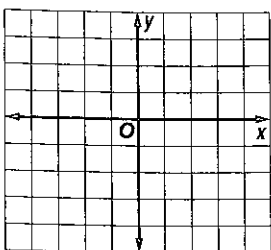
a. Find the coordinates of the vertices of each figure after the given transformation is performed.

b. Graph the preimage and its image.

4. triangle DEF with $D(2, 3)$, $E(4, 1)$, and $F(1, -1)$
translated 4 units left
and 3 units down

5. trapezoid $EFGH$ with $E(3, 2)$, $F(3, -3)$, $G(1, -2)$, and $H(1, 1)$
reflected over the y -axis

6. triangle XYZ with $X(3, 1)$, $Y(4, -2)$, and $Z(1, -3)$
rotated 90° counterclockwise
about the origin



GRAPHICS For Exercises 7-9, use the diagram at the right and the following information.

A designer wants to dilate the rocket by a scale factor of $\frac{1}{2}$, and then translate it $5\frac{1}{2}$ units up.

7. Write the coordinates for the vertices of the rocket.

8. Find the coordinates of the final position of the rocket.

9. Graph the image on the coordinate plane.

10. **DESIGN** Ramona transformed figure $ABCDEF$ to design a pattern for a quilt. Name two different sets of transformations she could have used to design the pattern.

