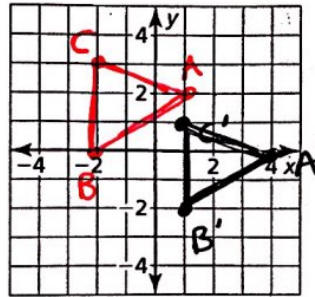
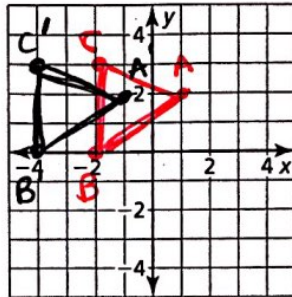
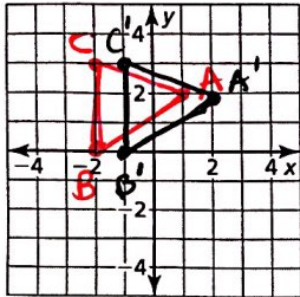


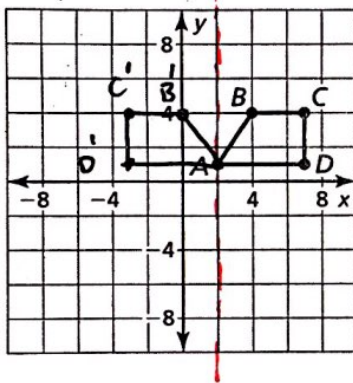
Graph  $\triangle ABC$  with vertices  $A(1, 2)$ ,  $B(-2, 0)$ , and  $C(-2, 3)$  and its image after the translation.

1.  $(x, y) \rightarrow (x + 1, y)$       2.  $(x, y) \rightarrow (x - 2, y)$       3.  $(x, y) \rightarrow (x + 3, y - 2)$

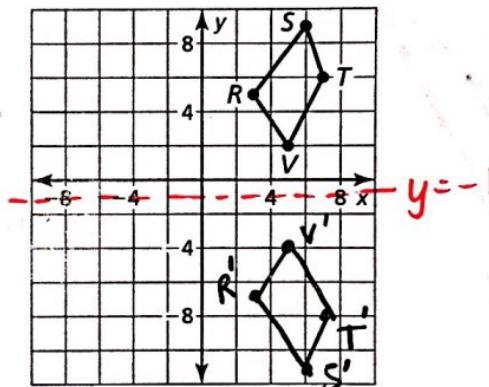


Graph the polygon's image after a reflection in the given line.

4.  $x = 2$



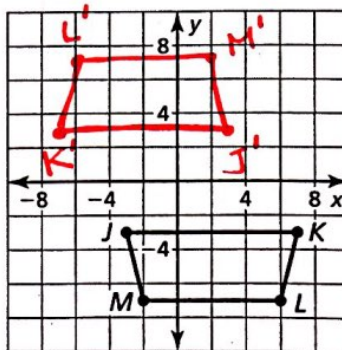
5.  $y = -1$



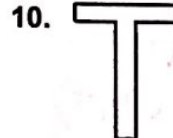
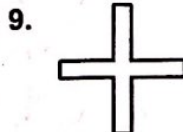
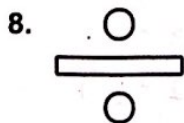
6. Identify the line symmetry (if any) of the word ~~CHECKBOOK?~~

7. Trapezoid  $JKLM$  is rotated  $180^\circ$  clockwise about the origin. What are the new coordinates of  $J'K'L'M'$ ?

$JKLM$   
 $(-3, -3) \rightarrow (3, 3)$   
 $(6, 3) \rightarrow (-6, 3)$   
 $(7, -3) \rightarrow (-7, -3)$   
 $(-2, -7) \rightarrow (2, 7)$



Determine whether the figure has rotational symmetry. If so, describe any rotations that map the figure onto itself.



Answers

1. See left.
2. See left.
3. See left.
4. See left.
5. See left.
6. See left
7. See left
8. yes rotation of 180°
9. yes rotation of 90°, 80°, 270°
10. NO

**Chapter 4**

**Test A (continued)**

Determine whether the polygons with the given vertices are congruent. Use transformations to explain your reasoning.

**Answers**

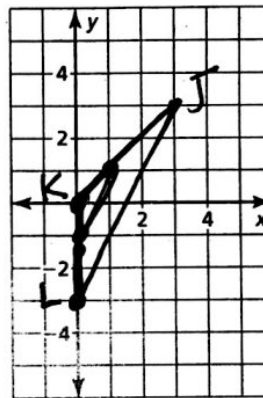
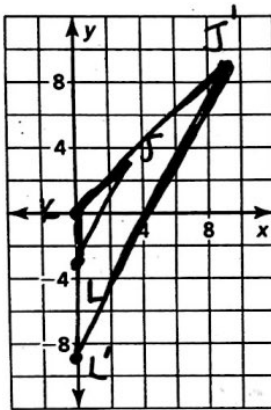
- $A(8, -6), B(1, -3), C(1, -9)$  and  $D(-7, 1), E(0, -2), F(0, 4)$
- $J(-4, 1), K(-10, 3), L(-10, 9), M(-4, 7)$ , and  $N(4, 2), O(2, -8), P(-4, -8), Q(-2, 2)$

11. yes  
 translate  $(x-1, y+5)$   
 rotation of  $180^\circ$

Graph  $\triangle JKL$  with vertices  $J(3, 3), K(0, 0)$ , and  $L(0, -3)$  and its image after a dilation with scale factor  $k$ .

13.  $k = 3$

14.  $k = \frac{1}{3}$



$J'(1,1)$   
 $K'(0,0)$   
 $L'(0,-1)$

12. no rigid transformation

will

work

13. See left.

14. See left.

15. disagree  
 $m\angle C = 80^\circ$   
 $m\angle E = 60^\circ$

so they are sim.

16. dilation  
S.F of 2

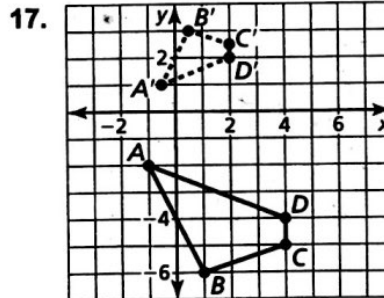
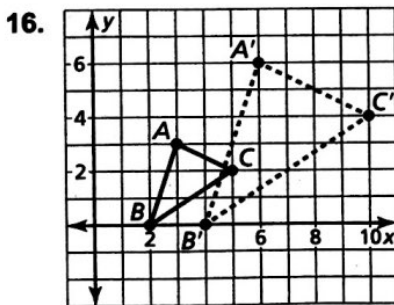
17. dilation  
scale factor  $\frac{1}{2}$   
then reflection  
x axis

15.  $\triangle ABC$  has  $m\angle A = 40^\circ$  and  $m\angle B = 60^\circ$ .  $\triangle DEF$  has  $m\angle D = 40^\circ$  and  $m\angle F = 80^\circ$ . Your partner concludes that the triangles are not similar. Do you agree or disagree? Why?

$\angle A = 40$   
 $\angle B = 60$   
 $100$   
 $100 m\angle C = 80$

$m\angle D = 40$  so  $m\angle E = 60$   
 $m\angle F = 80$

Describe a similarity transformation that maps the preimage to the image.



$A(3,3)$     $A'(6,6)$   
 $B(2,0)$     $B'(4,0)$   
 $C(5,2)$     $C'(10,4)$

$A(-1,-2)$     $A(-\frac{1}{2}, -1)$     $A(-\frac{1}{2}, 1)$   
 $B(1,-6)$     $B(\frac{1}{2}, -3)$     $B(\frac{1}{2}, 3)$   
 $C(4,-5)$     $C(2, -\frac{5}{2})$     $C(2, \frac{5}{2})$   
 $D(4,-4)$     $D(2, -2)$     $D(2, 2)$

dilate  $\frac{1}{2}$   
reflect  
x axis