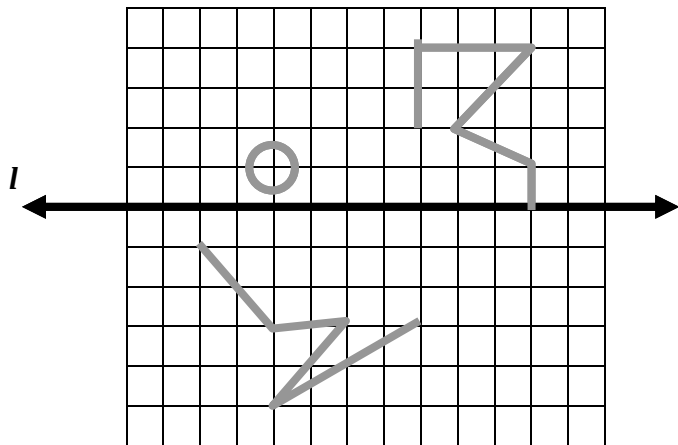
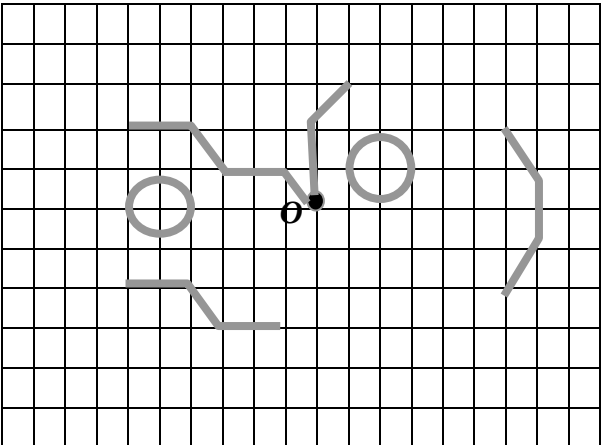


1. Complete the picture by reflecting the figure about line l .



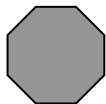
2. Complete the picture by reflecting the figure through the point O.



3. Put a check in each box under the type of symmetry possessed by the figure at the left.

	Vertical Line Symmetry	Horizontal Line Symmetry	Rotational Symmetry other than 0° or 180°	Point Symmetry	No Symmetry at all
A					
					
N					
					
					

4. List all of the rotational symmetries these shapes have, as degrees, and starting with 0° up to 360° .



a. _____



b. _____

5. A tree casts a shadow 40 feet long. In the same place, and at the same time, a yard-stick is held perpendicular to the ground and it casts a shadow 45 inches long.
- Draw a diagram of the situation.
 - Show how to find the height of the tree.
 - Give a mathematically correct explanation of why you can find the height of the tree this way.

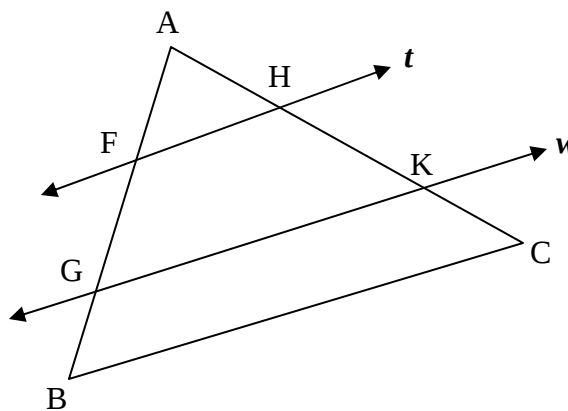
6. Lines t , w , and BC are parallel.
 Segment AF is 4 units long.
 Segment FG is 5 units long
 Segment BC is 17.25 units long.
 Segment AH is 5 units long.
 Segment GB is 2.5 units
 Find the following lengths:

(a) Segment FH _____

(b) Segment GK _____

(c) Segment HK _____

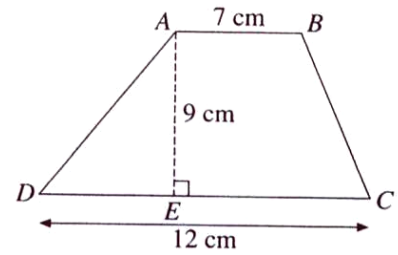
(d) Segment KC _____



7. The drawing at the right is a scale drawing of a plot of land.

The actual length of AB is 35 km.

- a. Find the actual length of CD.



- b. Find the actual length of AE.

- b. Find the actual area of the plot of land.

8. Set up a proportion and use it to solve this problem: The ratio of a rectangular floor's width to length is 4:5. The length of the floor is 20 feet. Find the area of the floor in square feet.

9. Set up a proportion and use it to solve this problem: What percent of 500 is 25?

10. Set up a proportion and use it to solve this problem: A case of ketchup contains 24 bottles of ketchup. If 1 case of ketchup lasts the diner 3 months, how much ketchup is used per week? (Assume 4 weeks to a month.)

11. Tanya earns a commission of \$15 for every \$80 of home cleaning product she sells. If her total sales are \$784, how much does she make on her commission?

12. RiverValley snack bars are packed 12 to a box and each bar contains 20 g of fat. Forty such boxes contain how much fat?

13. Triangle ABC has vertices $A(3, 4)$, $B(2, -8)$, and $C(-1, 6)$.

(a) What are the coordinates of the vertices of $A'B'C'$ under the mapping $(x, y) \rightarrow (x - 4, y - 5)$?

(b) What transformations of the shape of the triangle does this mapping produce?
Be specific and complete in your answer.

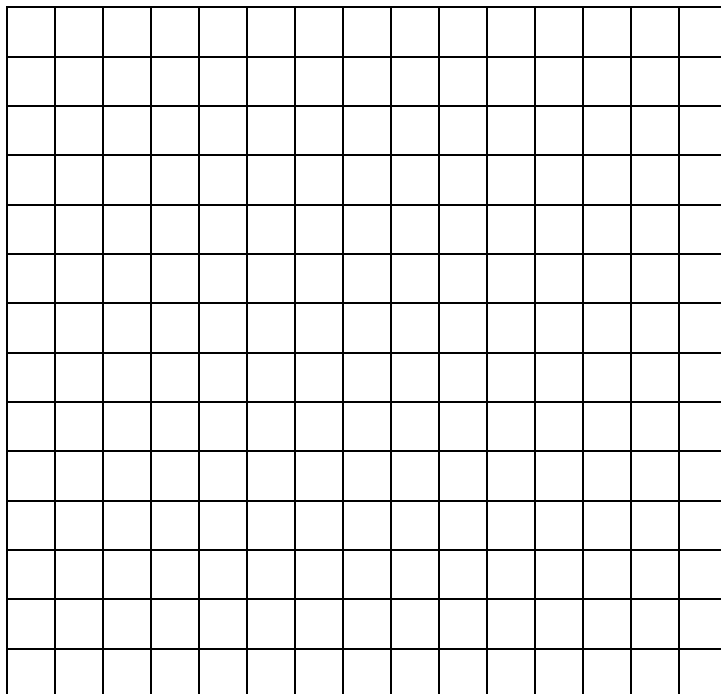
14. A rectangle with vertices $F(5, 2)$, $G(5, -4)$, $H(3, -4)$ and $K(3, 2)$ is reflected across the x -axis. What are the coordinates of F' , G' , H' , K' ?

F' _____

G' _____

H' _____

K' _____



15. The coordinates of two points are $E (-1, 2)$ and $F (-2, 0)$. For each mapping below, describe the transformation in shape that occurs to segment EF under that mapping AND tell what type of transformation it is.

(a) $(x, y) \rightarrow (x - 4, y)$

(b) $(x, y) \rightarrow (x, y + 4)$

(c) $(x, y) \rightarrow (-x, y)$

(d) $(x, y) \rightarrow (2x, y)$

(e) $(x, y) \rightarrow (x, \frac{1}{4}y)$

(g) $(x, y) \rightarrow (y, x)$

(h) $(x, y) \rightarrow (x, -y)$

(i) $(x, y) \rightarrow (x - 4, y + 2)$

(j) $(x, y) \rightarrow (\frac{1}{2}x, \frac{1}{2}y)$

(k) $(x, y) \rightarrow (-x, -y)$

