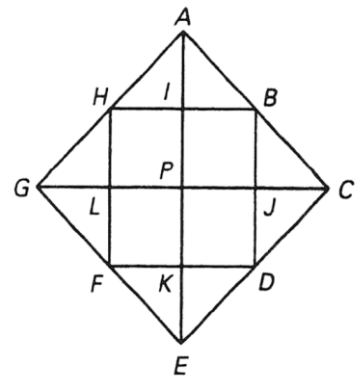


Name: \_\_\_\_\_

**Transformations Test Review Homework**

Using the figure shown, find the image for the specified transformation.



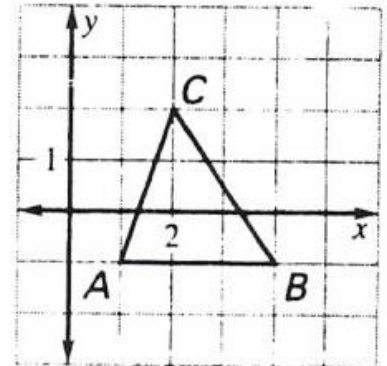
1.  $90^\circ$  clockwise rotation of  $\overline{AB}$  about P.
  2.  $90^\circ$  clockwise rotation of D about P.
  3.  $90^\circ$  counterclockwise rotation of  $\overline{GH}$  about P.
  4.  $180^\circ$  counterclockwise rotation of  $\overline{EF}$  about P.
  5.  $180^\circ$  clockwise rotation of  $\triangle CJD$  about P.
  6.  $90^\circ$  counterclockwise rotation of  $\triangle GLF$  about P.
7. Rotate the quadrilateral with coordinates  $A(1, 1)$ ,  $B(3, 1)$ ,  $C(6, 4)$ , and  $D(1, 3)$ , given the angles shown. Then graph the quadrilaterals on the same coordinate plane.
 

|               |                |                |                |
|---------------|----------------|----------------|----------------|
| a. $90^\circ$ | b. $180^\circ$ | c. $270^\circ$ | d. $360^\circ$ |
|---------------|----------------|----------------|----------------|
  8. Reflect the triangle with coordinates  $D(-3, 0)$ ,  $E(-4, 4)$ , and  $F(1, 1)$  in each line. Then graph each pair of triangles on the same coordinate plane.
 

|           |           |            |             |
|-----------|-----------|------------|-------------|
| a. y-axis | b. x-axis | c. $y = x$ | d. $y = -x$ |
|-----------|-----------|------------|-------------|

Perform the stated transformation on the preimage,  $\triangle ABC$ . Give the coordinates of the image,  $\triangle A'B'C'$ .

9. Rotation  $90^\circ$  clockwise about the origin
10. Reflection in  $x = 3$
11. Translation  $(x, y) \rightarrow (x + 3, y - 2)$

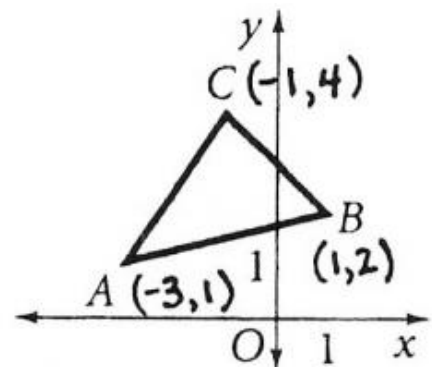


Perform the stated algebraic rule on the preimage,  $\triangle ABC$ . Give the coordinates of the image,  $\triangle A'B'C'$ . Specifically describe the transformation.

12.  $(x, y) \rightarrow (-x, -y)$
13.  $(x, y) \rightarrow (x - 3, y - 2)$
14.  $(x, y) \rightarrow (-2y, -2x)$

For #15-22, use  $\triangle ABC$ . Write the coordinates of each image, then write its algebraic rule.

15. a dilation four times the original size
16. a dilation half the original size
17. a rotation of  $90^\circ$
18. a rotation of  $180^\circ$
19. a translation 2 units left and 3 units down
20. a translation 1 unit right and 7 units up
21. a reflection in  $y = x$
22. a reflection in the x-axis



Find a single transformation that has the same effect as the composition of transformations indicated. Describe the transformation specifically. Then write the algebraic rule for the composition.

23.  $\langle -5, -7 \rangle$  followed by  $\langle 3, 6 \rangle$
24.  $\langle 10, -9 \rangle$  followed by  $\langle 1, 5 \rangle$
25. Translation up 3 and right 4, and a reflection over  $y = -x$ .
26. Reflection over  $y = 0$  and reduction by  $1/3$ .

Triangle TAM has vertices T(0, 5), A(4, 1), and M(3, 6).

27. What is the domain and range of TAM in interval notation?
28. Find the image of triangle TAM after performing the glide vector  $\langle -4, 0 \rangle$  and reflection in the line  $y = -2$ . Label the image T'A'M'.
29. What is the domain and range of T'A'M' in interval notation?

Find a function rule for the transformation of  $c(x)$  with ...

31. Translation left 5, up 3, vertical stretch by 2
32. Reflection over the x-axis, vertical compression of  $\frac{1}{2}$ , and translation left 7
33. Reflection over y-axis and translation down 4

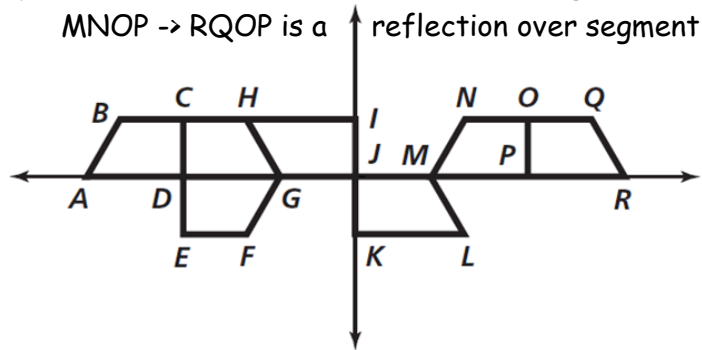
Given the function rule shown, determine the transformations of  $h(x)$ .

34.  $y = -3h(x - 2) + 1$
35.  $y = \frac{1}{2} h(-x) - 4$
36.  $y = -h(x + 7) + 5$

Specifically describe each transformation. Examples: ABCD  $\rightarrow$  GFED is a rotation 180 degrees about D.

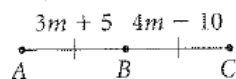
MNOP  $\rightarrow$  RQOP is a reflection over segment OP.

37.  $\triangle ABCD \rightarrow \triangle GHCD$
38.  $\triangle HGJI \rightarrow \triangle LMJK$
39.  $\triangle GFED \rightarrow \triangle RQOP$
40.  $\triangle MNOP \rightarrow \triangle ABCD$

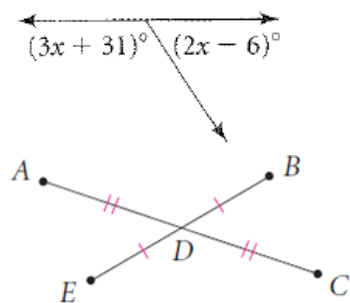


Solve given the information provided

41. a. Solve for m.



- b. Solve for x.



42. If  $AD = 12$  and  $AC = 4y - 36$ , find  $y$ . Then find  $AC$  and  $DC$ .

Use the diagram, below right, for Exercises 43 and 44. Solve for  $x$ .

(Hint: Find the angle measures to check your work.)

43.  $m\angle AOC = 7x - 2$ ,  $m\angle AOB = 2x + 8$ ,  
 $m\angle BOC = 3x + 14$
44.  $m\angle AOB = 28$ ,  $m\angle BOC = 3x - 2$ ,  $m\angle AOD = 6x$

