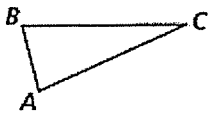
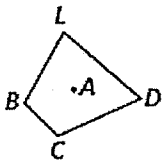
Transformations Review Name:

Sketch each figure and point A. Draw the image of each figure for the given rotation about A. Label the vertices of the image.

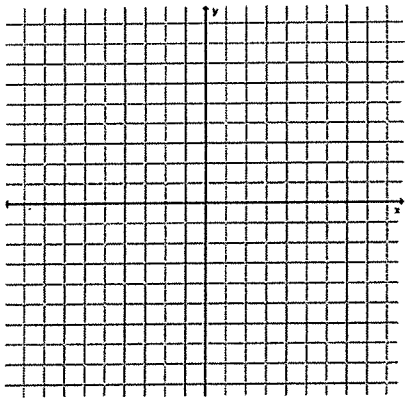
1. 90^o



2. 180^o

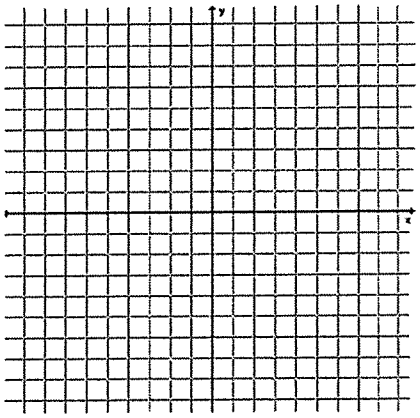


3. Find the image of $\triangle TQR$ with vertices $T(4, 1), Q(-2, 3)$, and $R(0, 6)$ for the translation 4 units right and 6 units down . Write a translation rule.

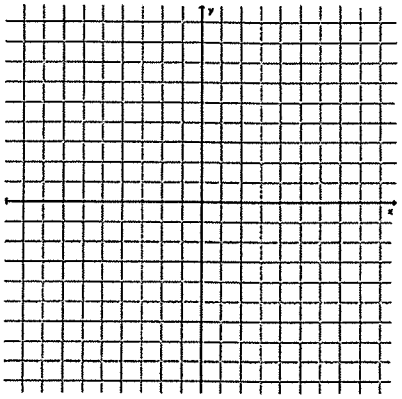


Find the image of $\Delta\, ABC$ with $A(1, 5), B(5, 5), C(3, 3)$ for each transformation

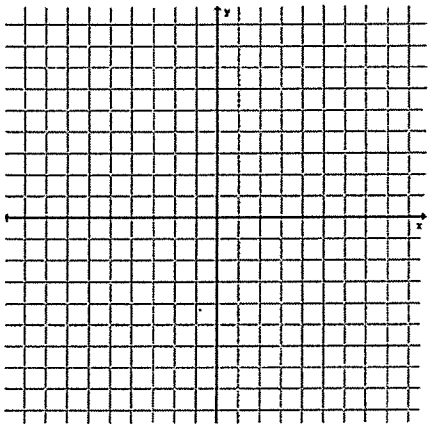
4. reflection across $x = 4$



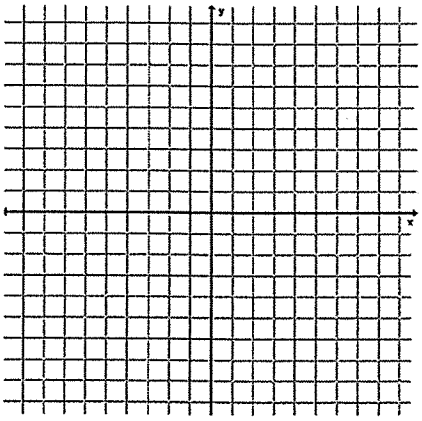
5. rotation of 90° about the point (0, 0).



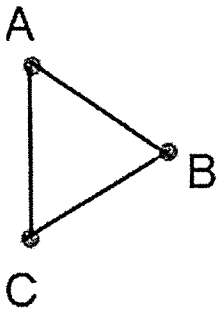
6. dilation with scale factor $\frac{1}{2}$ centered at the origin



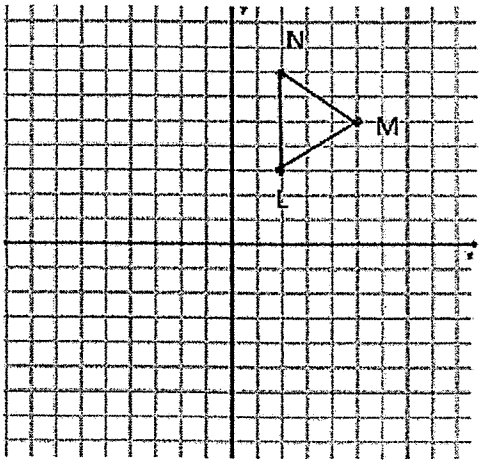
7. dilation with scale factor of 2 centered at point B.



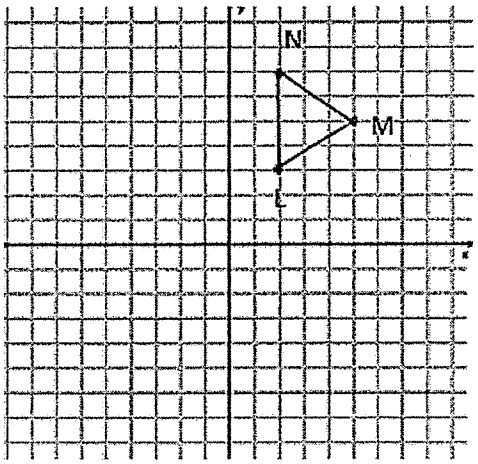
8. Dilate the figure with center A and scale factor 2



9. translate the given figure $(x, y) \rightarrow (x + 2, y - 5)$ followed by a **reflection** across $x = 1$



10. Reflect across $y = -x$



Geometry Transformations

11. Which of the following is true about circles and rigid transformations?

(A) Translation does not conserve the length of a circle's radius.
(B) A circle can be carried onto itself regardless of any rigid transformation performed on it
(C) Circles are identical after every 1° of rotation
(D) Reflection does not conserve the length of a circle's radius.

12. Point A has the coordinates (-4, 4). If we want to reflect A across the y-axis to make a new point, B, what will the coordinates of B be?

(A) (4, -4)
(B) (4, 4)
(C) (-4, -4
(D) (-8, 8)

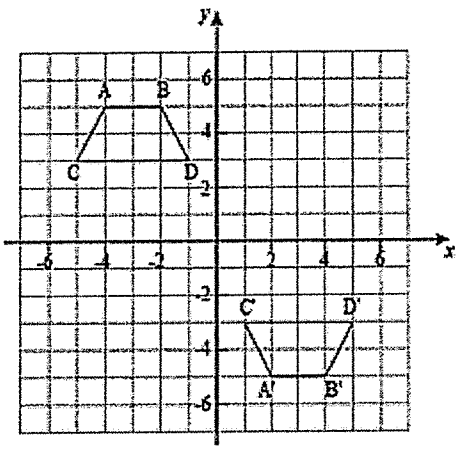
13. A triangle has vertices at A (2, 1), B (4, 4), and C (4, 1). Another triangle has coordinates at D (7, 3), E (9, 6), and F (9, 3). How many units must ΔABC be translated to carry onto ΔDEF?

(A) 5 units to the right, 2 units up
(B) 5 units to the right, 2 units down
(C) 5 units to the right, 5 units up
D) 2 units up

14. Which two transformation or transformation will create trapezoid $A'B'C'D'$ from trapezoid $ABCD$?

(A) Translation only
(B) Translation and rotation
(C) Translation and reflection
(D) Reflection only

Give the specific rule(s) for your answer.



15. The points of rectangle are L (-4, 6), M (-1, 6), N (-1, 2), and O (-4, 2). The rectangle is first reflected across the y-axis and then translated down 4 units and to the left 1 unit. Which of the following are the correct coordinates of rectangle $L'M'N'O'$?

(A) L' (3, 2), M' (0, -2), N' (0, 2), O' (3, -2)
(B) L' (3, 2), M' (0, 2), N' (0, -2), O' (3, -2)
(C) L' (-5, -10), M' (-2, -10), N' (-2, -6), O' (-5, -2)
(D) L' (-5, -10), M' (0, -10), N' (-2, -2), O' (-5, -6)

16. A square mirror has a horizontal scratch in the bottom right corner. If you reflect the mirror across a horizontal axis and then rotate it 90° counterclockwise about origin, where will the scratch be and how will it be oriented?

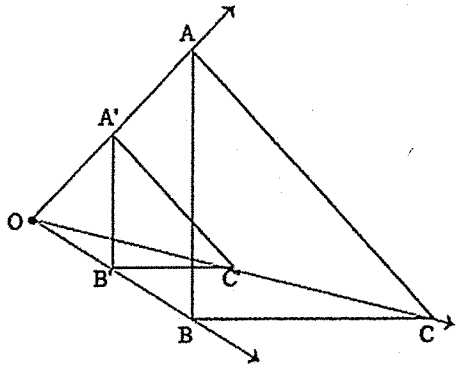
(A) Vertically in the bottom right corner
(B) Horizontally in the top right corner
(C) Vertically in the top left corner
(D) Horizontally in the bottom left corner

Geometry Transformations

17. What is a scale factor?

(A) The number by which the distance from the center of dilation to an object is multiplied by to obtain a similar object as measured from the center of dilation to the dilated object
(B) The number by which the distance from the center of dilation to an object is subtracted by to obtain a similar object as measured from the center of dilation to the dilated object
(C) The coordinate pair of the center of dilation
(D) The distance between the two objects or images

18. Which of the following statements is true about the figure?

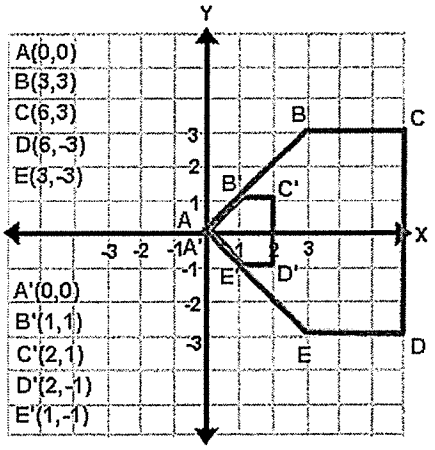


(A) $\Delta A'B'C'$ is congruent to ΔABC
(B) ΔABC has been dilated by a factor of 9 to create the image $\Delta A'B'C'$
(C) ΔABC has been dilated using O as the center
(D) ΔABC has been dilated using A' as the center.

19. I can identify the various types of transformations in terms of similar or congruent images.
PROOF OF UNDERSTANDING:

TYPE	PRODUCES?
TRANSLATION	similar or conguent
REFLECTION	similar or conguent
ROTATION	similar or conguent
DILATION	similar or conguent

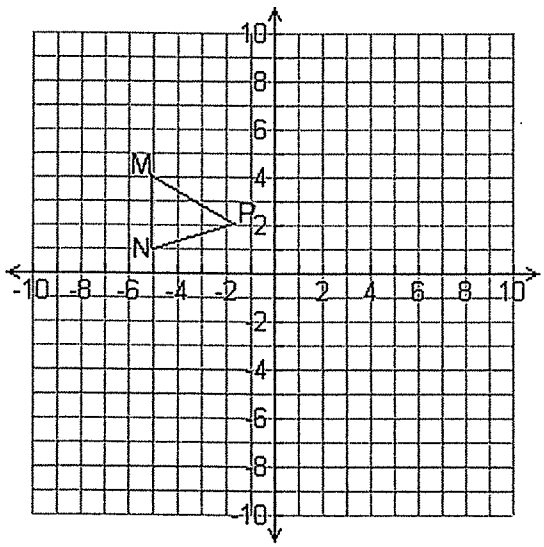
20. I can recognize and explain a dilation in terms of reduction or enlargement.



Explain = _____

Rule _____

21.



Use the preimage ΔMNP for the following steps. Every image becomes the pre image of the next step.

1. Reflect across axis y = -1

2. Rotate -180° about point P'

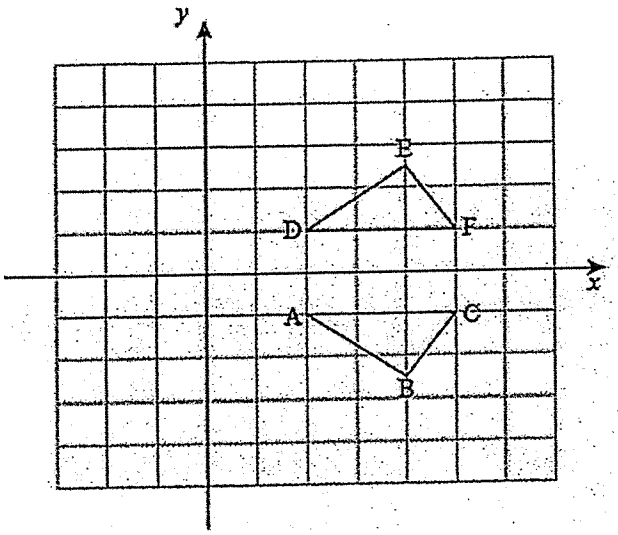
3. Reflect across y axis

4. (x,y) →(x+2, y+5)

What are the coordinates of M^4 N^4 P^4

22.

What kind of transformation turns ΔABC into ΔDEF?



(A) Translation

(B) Rotation

(C) Reflection

(D) All of the above

Write the rule for this transformation: _____

23.

You ride the elevator from the lobby of the Empire State Building to the very top. What transformation is this motion?

(A) Rotation

(B) Translation

(C) Reflection

(D) Dilation

24.

A community wants to move a skateboard park for safety and noise reasons. The volunteers decide to move the skateboard park 128 feet east and 52 feet south. Assuming the positive y-axis on a coordinate plane as north, which function represents the translation coordinates of the skateboard park?

(A) $(x, y) \rightarrow (x + 52, y + 128)$

(B) $(x, y) \rightarrow (x + 128, y - 52)$

(C) $(x, y) \rightarrow (x - 128, y - 52)$

(D) $(x, y) \rightarrow (x - 128, y + 52)$

25. How many degrees would a regular octagon (the shape of a stop sign) need to be rotated to carry it onto itself?

(A) 20

(B) 30°

(C) 45°

(D) 60°