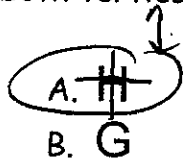


Transformations Mixed Review

multiply

1) Which one of the following letters has both vertical and horizontal line symmetry?


 A. H
 B. G
 C. P
 D. J

Fold over

6) If $T'(3, 6)$ is the image of point $T(1, 2)$ under a dilation with respect to the origin, what is the constant of the dilation?

$T(1, 2) \rightarrow T'(3, 6)$
 $\frac{6}{2} = 3$
 $k = 3$

Scale factor

2) Which one of the following letters has only vertical line symmetry?

A. K
 B. V
 C. F
 D. D

7) What is the image of the point $(-6, 5)$ under the translation that shifts (x, y) to $(x-3, y+6)$?

$(-6-3, 5+6)$
 $(-9, 11)$

3) Find the image of $(6, -3)$ under the dilation D_3 .

multiplies scale factor
 $(18, -9)$

8) If the point $(-5, 3)$ undergoes the translation $T(x+2, y-9)$, what would be the coordinates of the image?

$(-5+2, 3-9)$
 $(-3, -6)$

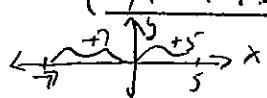
4) What are the coordinates of the image of $A(4, -5)$ under a reflection in the x-axis?

$A'(4, 5)$

Change the value of the y-coordinate

9) Using the translation that maps $(-7, 2)$ to its image $(5, 1)$, what is the image of any point (x, y) ?

$(-7, 2) \rightarrow (5, 1)$
 $(x+12, y-1)$



5) What are the coordinates of the image of $B(-6, -8)$ under a reflection in the y-axis?

$B'(6, -8)$

Change the value of the x-coordinate

10) What type of symmetry does the letter **X** have? Point, line, or both?

turn upside down
 fold over
Both

11) Under which transformation is the image similar but not congruent to the original figure? *Different size*

Dilation

12) Find the image of $(-8, 12)$ under the dilation $D_{\frac{1}{2}}$

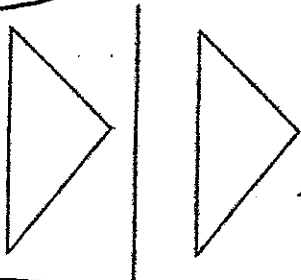
$-\frac{1}{2} \cdot 12$

Scale factor multiply

$(-4, 6)$

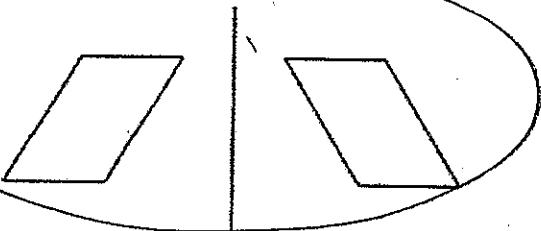
13) Which pair of figures below shows a reflection across the vertical line? *opposite*

A.

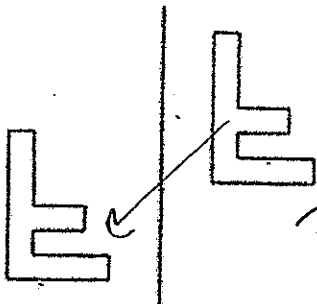


Translation

B.

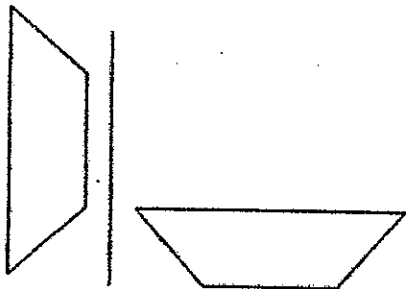


C.



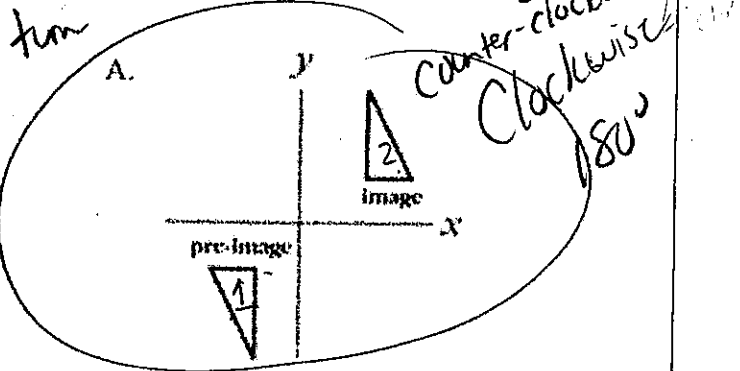
Translation

D.

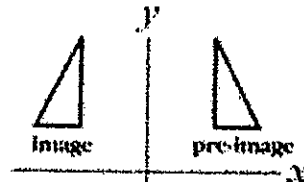


Rotation

14) Which diagram below best shows a rotation of the pre-image to the image?



B.



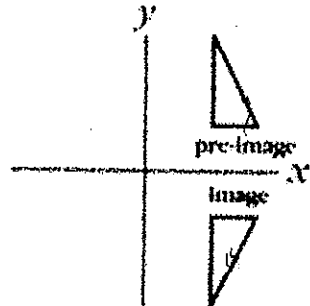
Reflection over the y-axis

C.



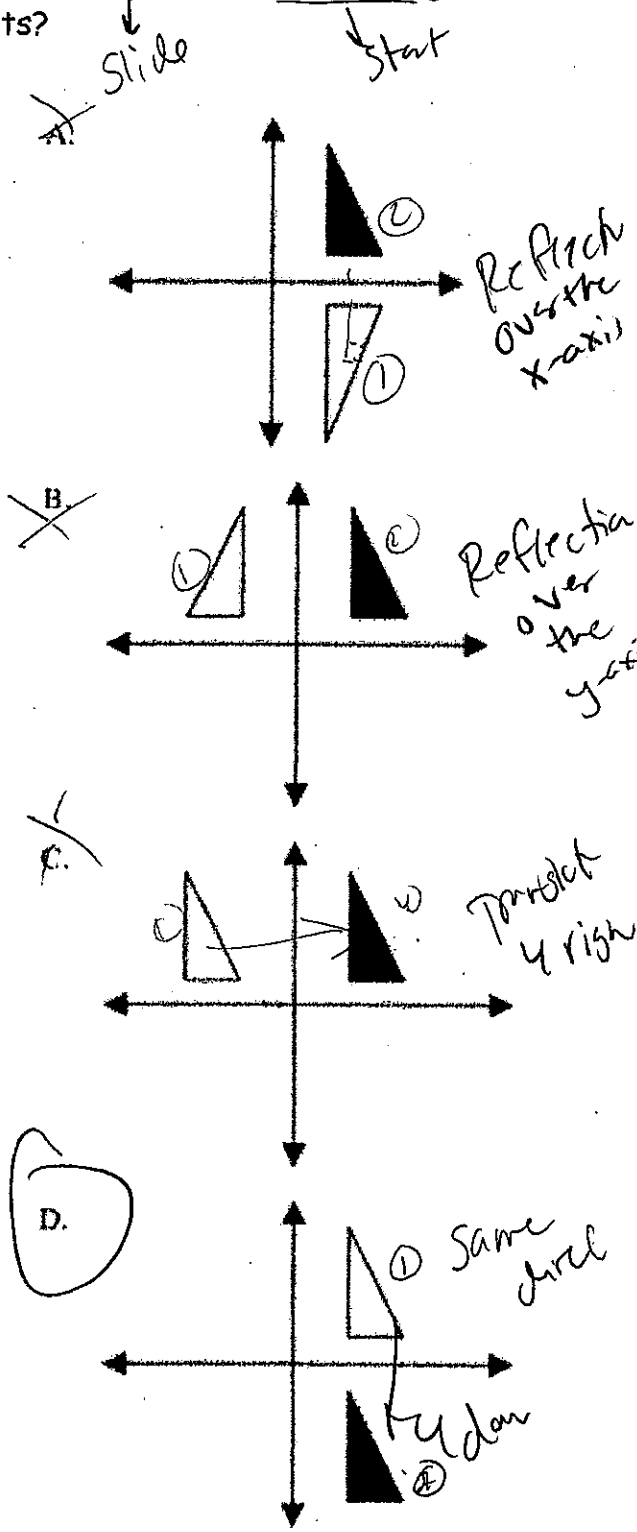
Translation

D.

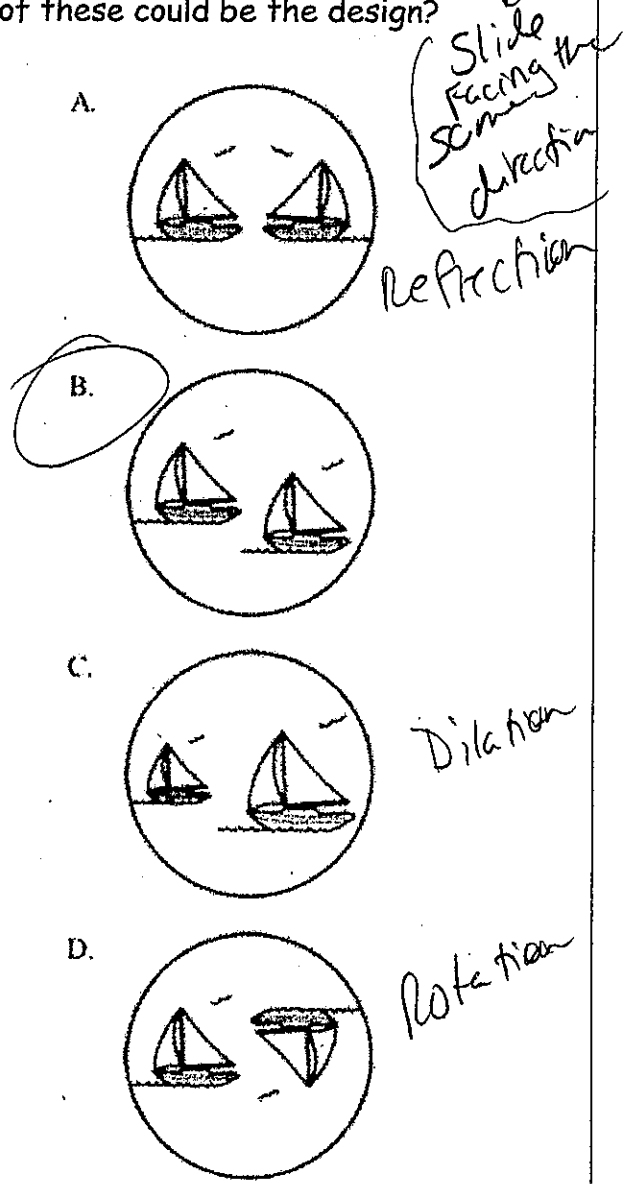


Reflection over the x-axis

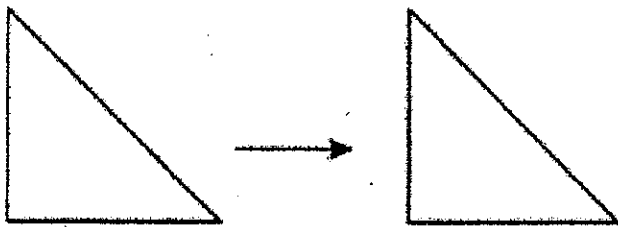
15) Which of the diagrams below best shows a translation of the white triangle down 4 units?



16) A member of the Boating Club created a design with two boats. The two boats in the design are related only by a translation. Which of these could be the design?



17) Dana had a triangle on her desk and moved it as shown in the following picture:

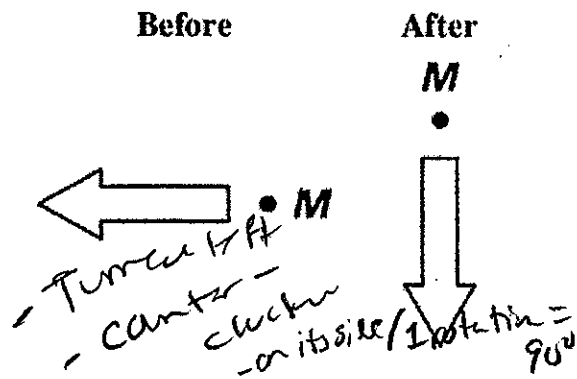


What transformations describes the movement of the triangle?

Translation

(Slide, same direction)

18) The position of an arrow and Point M are shown in the before-and-after drawing below.

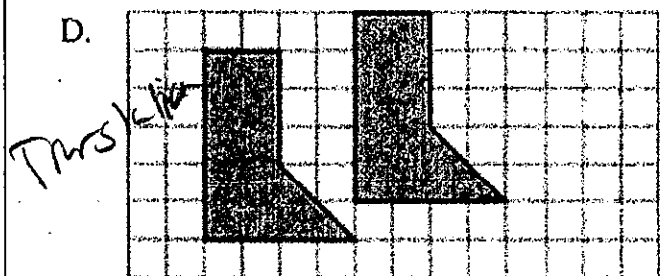
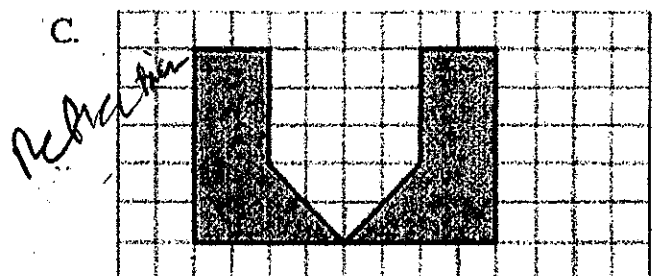
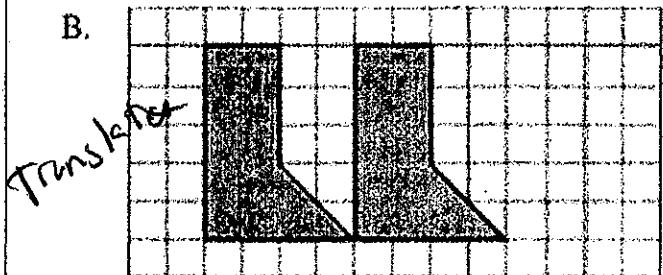
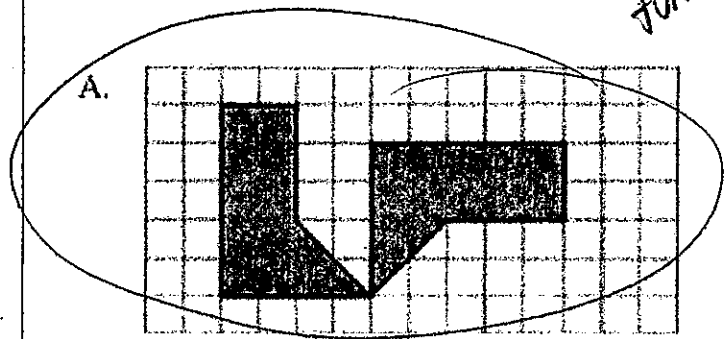


Which statement best describes how the position of the arrow was changed from before to after?

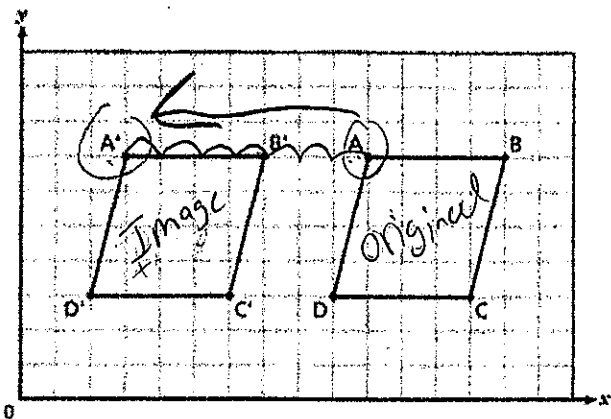
- A. The arrow was rotated 90° clockwise around Point M.
- ~~B. The arrow was rotated 180° clockwise around Point M.~~
- C. The arrow was rotated 90° counterclockwise around Point M.
- ~~D. The arrow was rotated 270° counterclockwise around Point M.~~

19) Which of the following shows a rotation?

turn



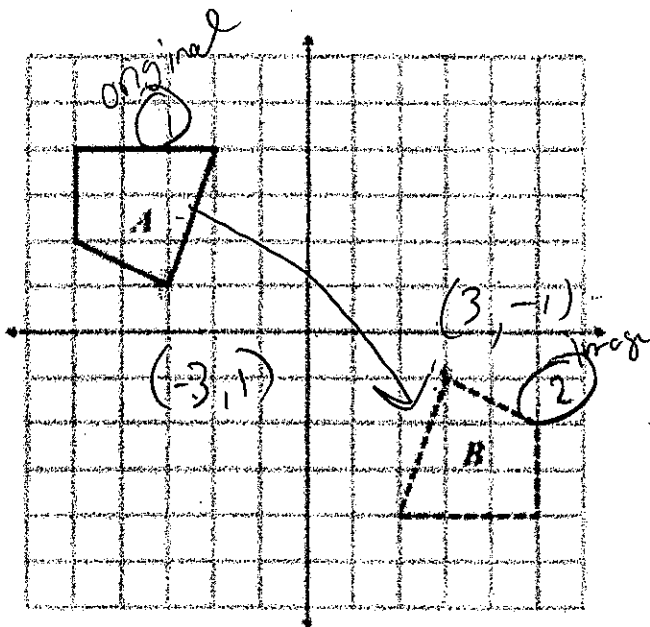
20) Parallelogram ABCD was translated to parallelogram A'B'C'D'.



How many units and in which direction were the x-coordinates of parallelogram ABCD moved?

7 units to the left

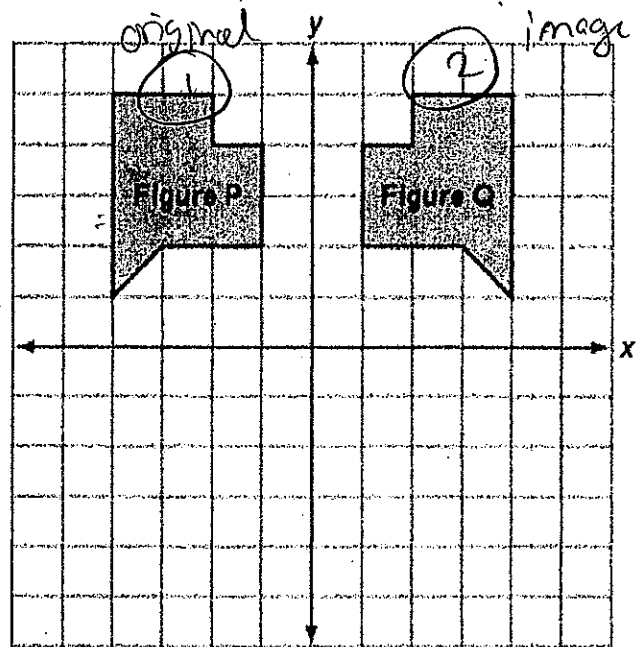
21) Which transformation maps the solid figure A onto the dashed figure B?



- A. Rotation 180° about the origin
- B. Translation to the right and down.
- C. Reflection across the x-axis.
- D. Reflection across the y-axis.

change sign of both coordinates

22) Lainey ~~draw~~^{draw} Figure P on a coordinate grid. Then she did a one-step transformation of Figure P to draw Figure Q, as shown below.



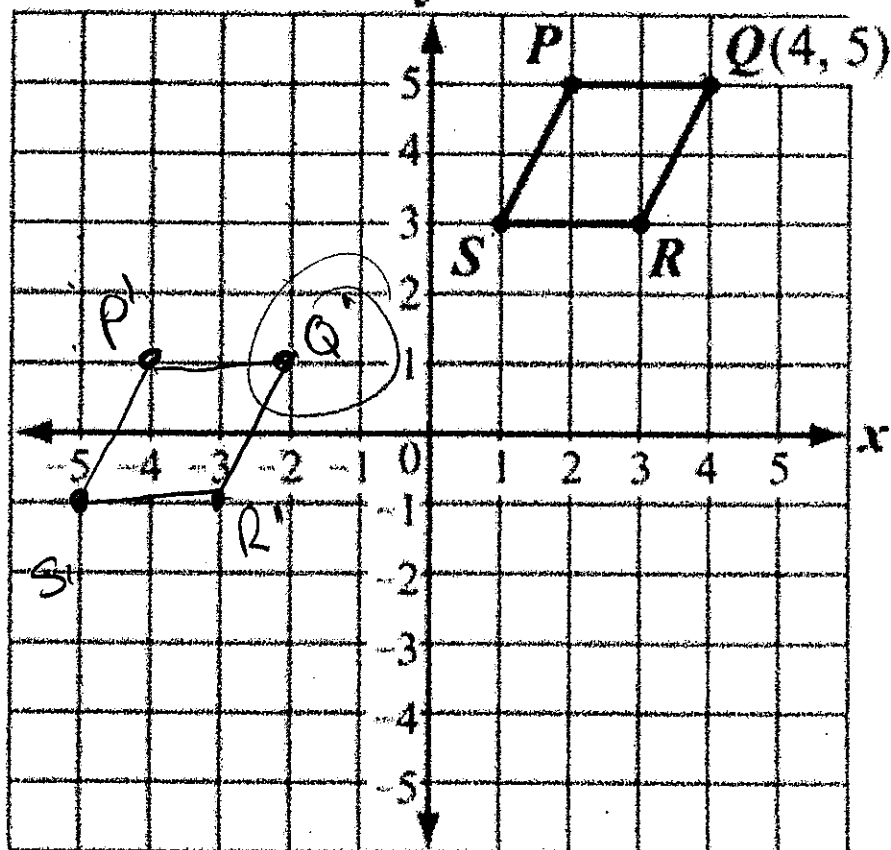
Which of the following one-step transformations of Figure P could Lainey have done to draw Figure Q?

- A. Rotation 180° clockwise.
- B. Translation to the right.
- C. Reflection across the x-axis.
- D. Reflection across the y-axis.

23) Parallelogram PQRS and the coordinates of point Q are shown on the coordinate plane below.

Graph the image of PQRS after a translation of $(x-6, y-4)$.

y left 6 down 4



What are the coordinates of point Q'?

(-2, 1)