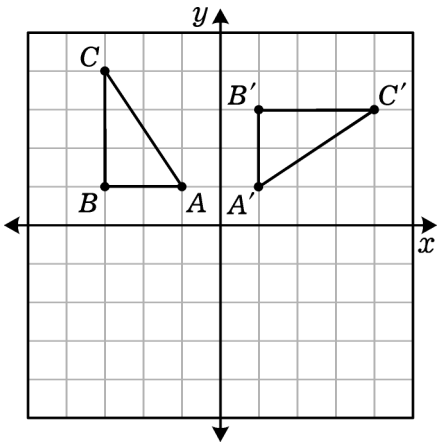
TRANSFORMATION AND DILATIONS 2

Name: _____ **Date:** _____

1. Which of the following will map $\triangle ABC$ onto $\triangle A'B'C'$?



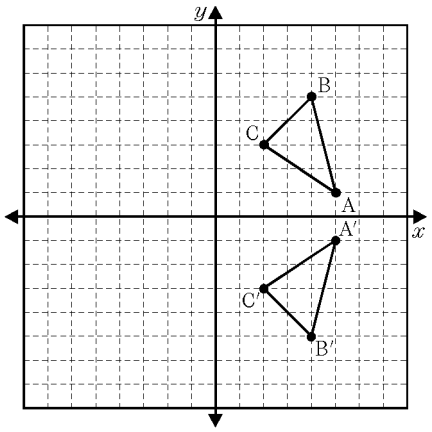
A. clockwise turn 90° about the origin

B. reflection in the y-axis

C. reflection in the x-axis

D. translation 2 units right and 1 unit up

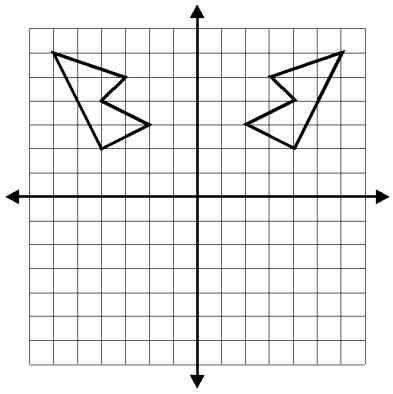
2. What is the mapping for the reflection where $\triangle ABC$ maps to $\triangle A'B'C'$?



A. $(x, y) \rightarrow (x, -y)$ **B.** $(x, y) \rightarrow (-x, -y)$

C. $(x, y) \rightarrow (x, y)$ **D.** $(x, y) \rightarrow (x, -\frac{1}{2}y)$

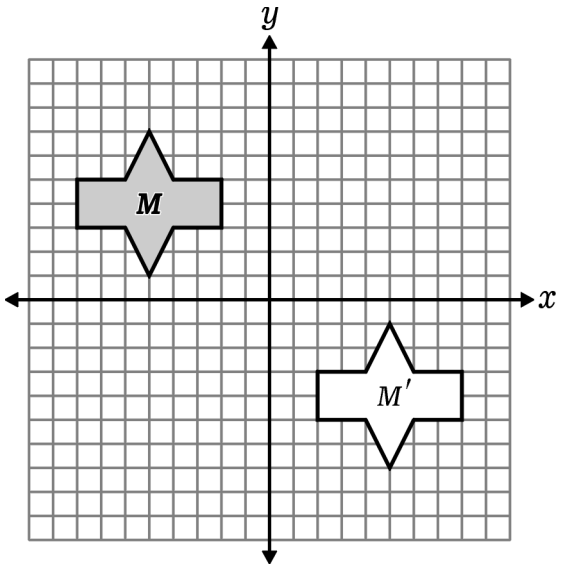
3. Which of the following is the correct mapping for shape A to shape B?



A. $(x, y) \rightarrow (-x, -y)$ **B.** $(x, y) \rightarrow (-x, y)$

C. $(x, y) \rightarrow (x, -y)$ **D.** $(x, y) \rightarrow (x - 7, -y)$

4. In the diagram, M and M' are congruent.



Which of the following is *not* a way of transforming M into M'?

A. a rotation of 180° about the origin

B. a reflection across the x-axis, then a reflection across the y-axis

C. a reflection across the y-axis, then a translation down 2 units

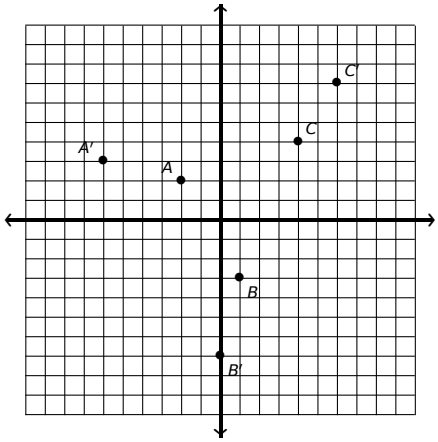
D. a translation down 8 units, then a translation right 10 units

5. A translation maps $J(1, 4)$ onto $K(7, -3)$. Find the coordinates of the image of $L(5, 10)$ under the same translation.

A. $(11, 3)$ **B.** $(-11, 7)$

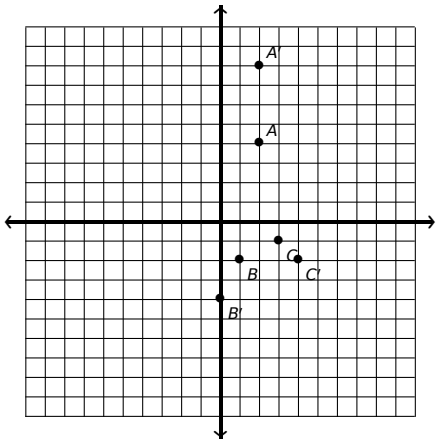
C. $(1, -17)$ **D.** $(-1, -17)$

6. $\triangle ABC$ is the original figure and $\triangle A'B'C'$ represents its dilation image. What is the center of dilation?



A. $(0, 0)$ **B.** $(1, 3)$ **C.** $(1, 2)$ **D.** $(2, 1)$

7. $\triangle ABC$ is the original figure and $\triangle A'B'C'$ represents its dilation image. Fill in the blanks:



$\triangle A'B'C'$ is a dilation of $\triangle ABC$ by a factor of _____ about the point _____.

A. 4; (2, 0) **B.** 4; (2, 8)

C. 2; (2, 0) **D.** 2; (3, 0)

8. $\triangle A'B'C'$, with vertices $A'(0, 0)$, $B'(0, 2)$ and $C'(1.5, 3)$, is the image of $\triangle ABC$ with vertices $A(0, 0)$, $B(0, 4)$, and $C(3, 6)$ under a dilation. If the origin is the center of dilation, what is the scale factor?

A. $\frac{1}{4}$ **B.** $\frac{1}{2}$ **C.** 2

D. undefined

9. Given a $\triangle ABC$ in a coordinate plane and its image figure $\triangle A'B'C'$ after any translation, which of the following are *always* true?

I. $m\angle B = m\angle B'$

II. The distances AB' and $A'B$ are equal.

III. $\triangle ABC$ is congruent to $\triangle A'B'C'$.

IV. $\overline{AB} \parallel \overline{A'B'}$

A. I only **B.** I and II only

C. I, III and IV **D.** I, II and III

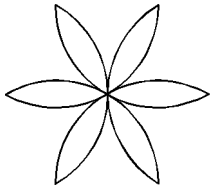
10. What is the the rotational symmetry of a rhombus?

A. 120° **B.** 100° **C.** 90° **D.** 60°

11. What is the rotational symmetry of an equilateral triangle?

A. 120° **B.** 100° **C.** 90° **D.** 60°

12. Look at this figure:



If the figure is rotated a certain number of degrees, the transformed figure will coincide with (overlap) the original. Which of these *cannot* be the rotation?

A. -240° **B.** 120° **C.** 180° **D.** 320°

13. Which letter has point symmetry but does *not* have line symmetry?

A. C **B.** M **C.** O **D.** Z

14. Which of these symbols have point symmetry?

I. 

II. 

III. 

IV. 

A. II only **B.** I and IV only

C. all except I **D.** all except II

15. The vertices of $\triangle ABC$ have coordinates $A(0, 0)$, $B(0, 4)$ and $C(6, 0)$. A second triangle, which is a transformation of the first, has the same vertex A. If its other vertices are $B'(2, 0)$ and $C'(0, -3)$, then which of the following statements are true?

I. $\triangle AB'C'$ is a dilation of $\triangle ABC$.

II. $\triangle AB'C'$ is a rotation of $\triangle ABC$.

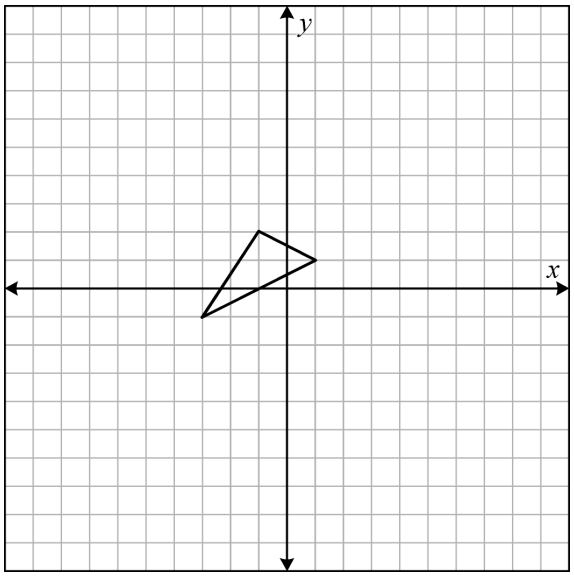
III. $\triangle AB'C'$ is similar to $\triangle ABC$.

IV. $\triangle AB'C'$ is congruent to $\triangle ABC$.

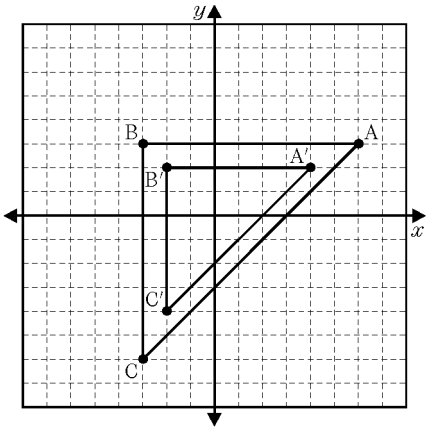
A. I only **B.** II only

C. III only **D.** all except IV

16. With the point $(1, -2)$ as the center, draw a dilation of the given triangle, scale factor 2.



17. What is the scale factor of the dilation that maps $\triangle ABC \rightarrow \triangle A'B'C'$?



A. $\frac{2}{3}$ **B.** 2 **C.** 3 **D.** 6

18. The image point $A'(2, 6)$ is a dilation of scale factor $c = \frac{3}{2}$. What are the coordinates of the original point?

A. $(3, 9)$ **B.** $(\frac{4}{3}, 4)$ **C.** $(\frac{4}{3}, 9)$ **D.** $(\frac{1}{3}, 4)$

19. $\triangle A'B'C'$ is the image of $\triangle ABC$ after a dilation of scale factor 2 and center the origin. Which of the following properties are true about the given dilation?

I. $m\angle A = m\angle A'$

II. $AB = 2 \cdot A'B'$

III. $\triangle ABC \sim \triangle A'B'C'$

IV. $m\angle B = 2 \cdot m\angle B'$

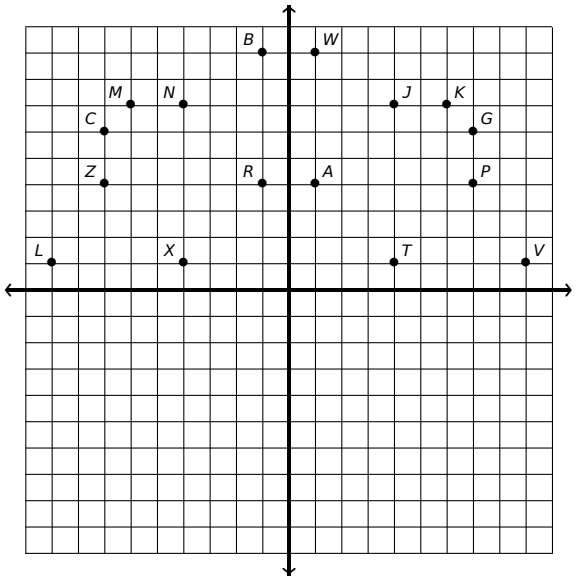
A. I only **B.** III only

C. I and II only **D.** I, II and III

20. $\square RPGW$, with coordinates $R(-1, 4)$, $P(7, 4)$, $G(7, 6)$ and $W(1, 9)$, undergoes the transformations:

I. reflection in the y-axis; and

II. rotation of 90° clockwise

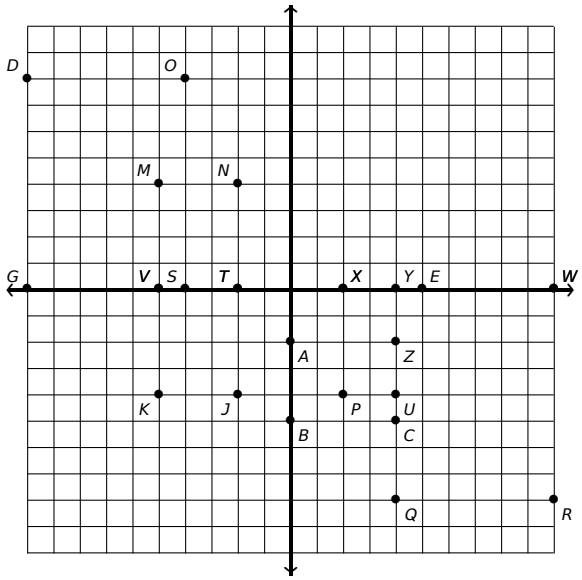


Which of the following is the image figure?

A. $\square TJKV$ **B.** $\square XNML$

C. $\square XTCB$ **D.** $\square ATJB$

21. $AZCB$ has coordinates $A(0, -2)$, $Z(4, -2)$, $C(4, -5)$ and $B(0, -5)$. Draw the figure on the grid below.



The figure undergoes these transformations:

- rotation $\frac{1}{4}$ rotation clockwise
- reflection about the y-axis
- dilation by a factor of 2

Which of the following is the image figure?

A. $TJKV$ **B.** $SODG$ **C.** $YQRW$ **D.** $GVST$

TRANSFORMATION AND DILATIONS 2 1/27/2018

1.
Answer: A
Objective: G.3d

2.
Answer: A
Objective: G.3d

3.
Answer: B
Objective: G.3d

4.
Answer: C
Objective: G.3d

5.
Answer: A
Objective: G.3d

6.
Answer: D
Objective: G.3d

7.
Answer: C
Objective: G.3d

8.
Answer: B
Objective: G.3d

9.
Answer: C
Objective: G.3d

10.
Answer: C
Objective: G.2D.1.9

11.
Answer: A
Objective: G.2D.1.9

12.
Answer: D
Objective: G.2D.1.9

13.
Answer: D
Objective: G.2D.1.9

14.
Answer: B
Objective: G.2D.1.9

15.
Answer: D
Objective: G.2D.1.9

16.
Answer:
Objective: G.2D.1.9

17.
Answer: A
Objective: G.2D.1.9

18.
Answer: B
Objective: G.2D.1.9

19.
Answer: D
Objective: G.2D.1.9

20.
Answer: A
Objective: G.2D.1.9

21.
Answer: C
Objective: G.2D.1.9