

Name Key Geometry Unit 1 Review for TEST

Your test has 25 multiple choice questions.

4 translations

6 Reflections

4 Rotations

3 Rotational and reflectional symmetry

3 dilations

3 composition of transformations

2 other

\*you **must** be able to plot points and read the ordered pairs from a graph

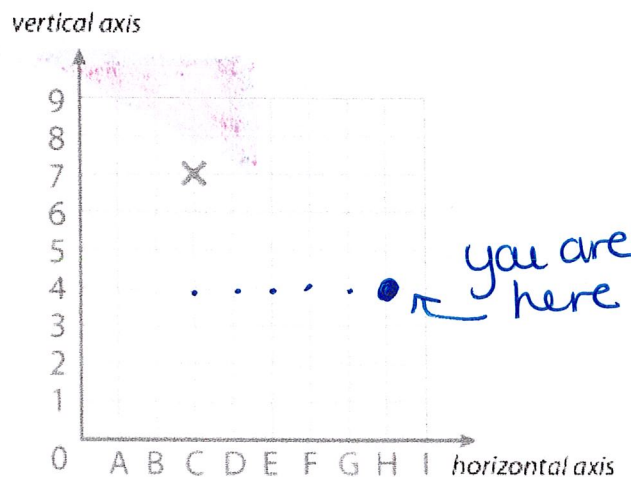
Also study your quiz and quiz review!

### Translation Review

1. You are located at H4. You want to reach the X. Which translation will help you?

- A. left 6 up 4
- B. left 6 down 3
- C. left 3 up 5
- D. right 1 up 2

E. left 5 up 3



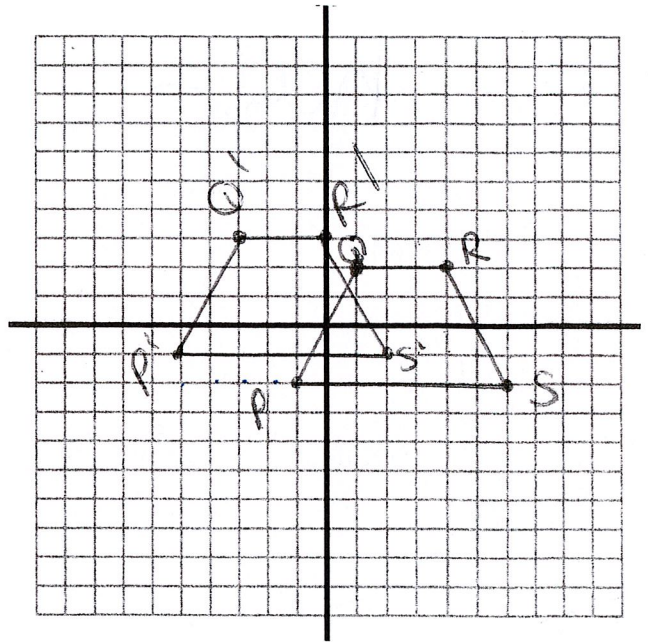
2. A (3, 2) B (4, 6) C (6, 0) if this triangle is translated  $\langle -4, -3 \rangle$  what are the coordinates of B'? \_\_\_\_\_ (you can use graph paper for help!)

$$\begin{array}{r}
 (4, 6) \\
 + \langle -4, -3 \rangle \\
 \hline
 B' = (0, 3)
 \end{array}$$

3. Write a rule to describe the translation:

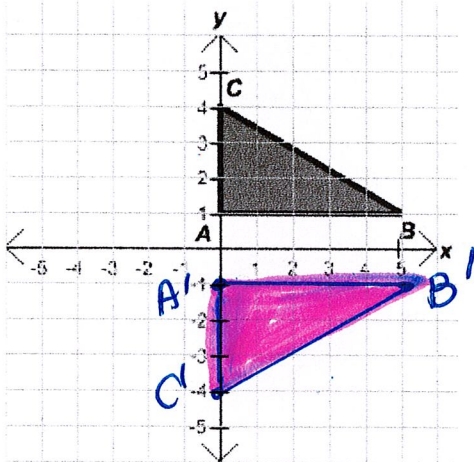
$$P \rightarrow P'$$

$$\begin{aligned} &\text{left 4, up 1} \\ &(x, y) \rightarrow (x-4, y+1) \\ &\langle -4, 1 \rangle \end{aligned}$$

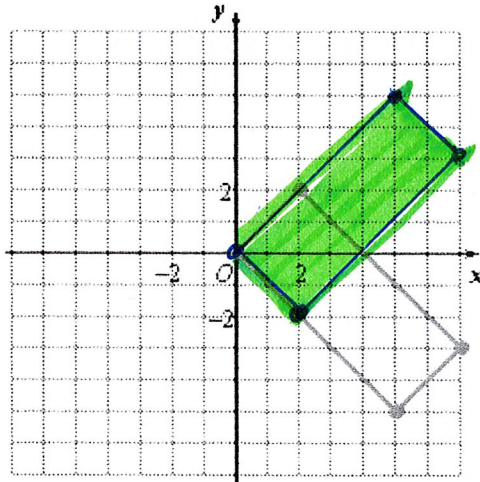


### Reflection Review

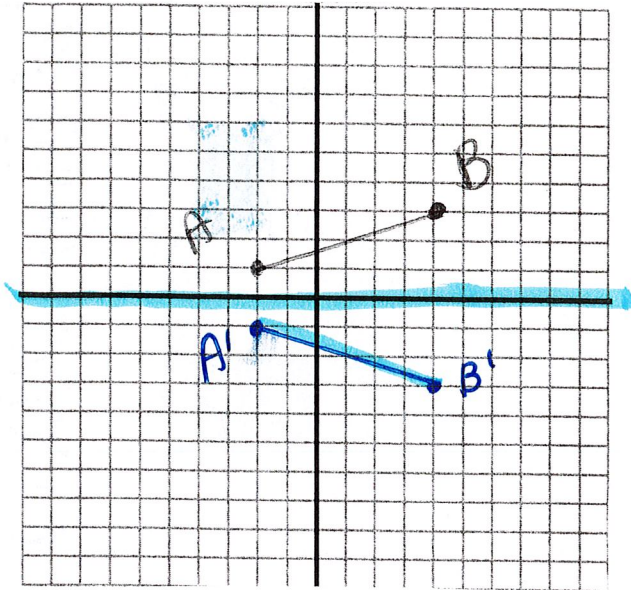
4. reflect over the x-axis



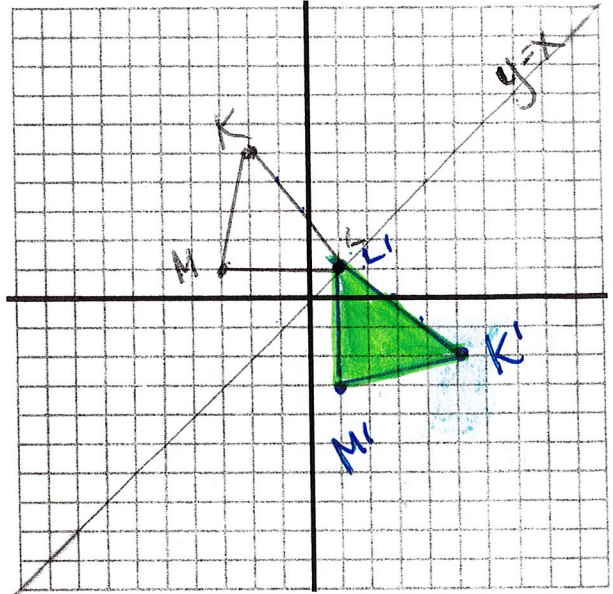
5. Reflect over the x-axis



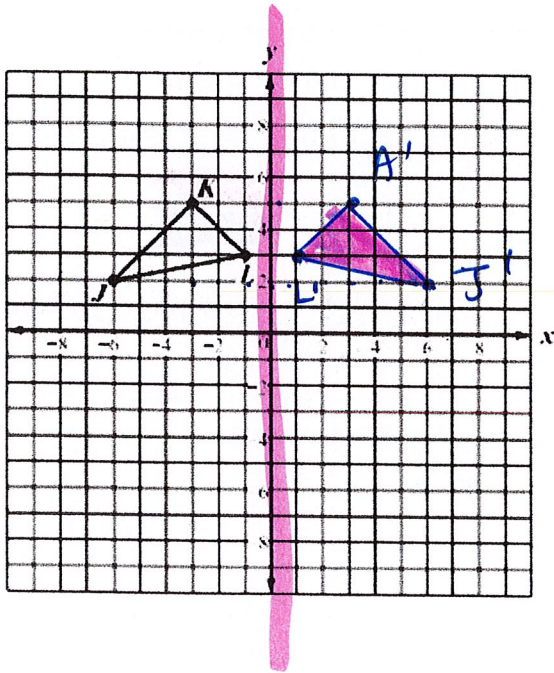
6. reflect over the x-axis



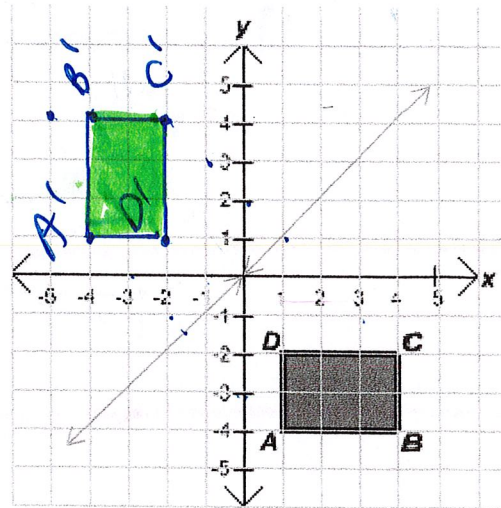
7. Reflect over the line  $y = x$



8. reflect over the y-axis

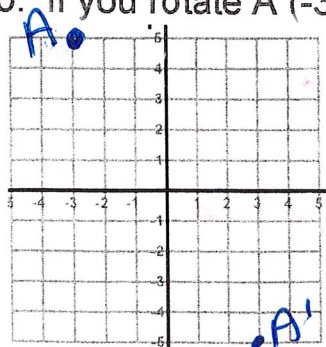


9. Reflect over the line  $y = x$



**Rotation Review**

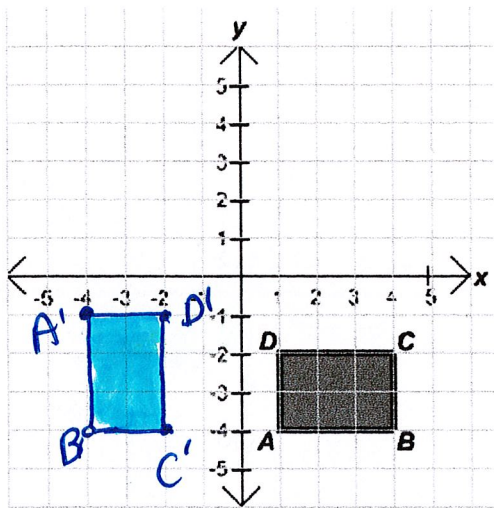
10. if you rotate A (-3, 5) 180° about the origin, where will A' be? \_\_\_\_\_



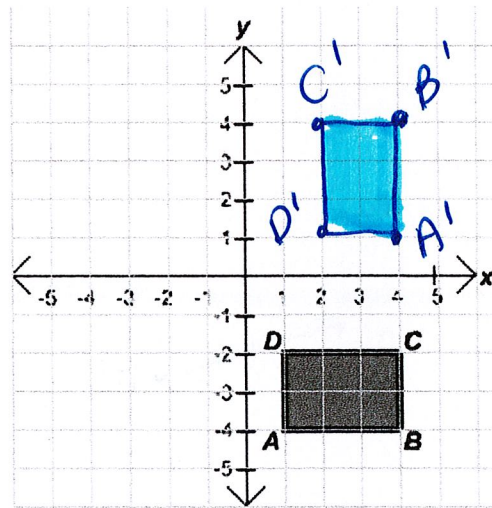
(3, -5)

$A'(-4, -1)$   $B'(-4, -4)$   $C'(-2, -4)$   $D'(-2, -1)$   
 $A'(4, 1)$   $B'(4, 4)$   $C'(2, 4)$   $D'(2, 1)$

11. rotate 270° counterclockwise about origin



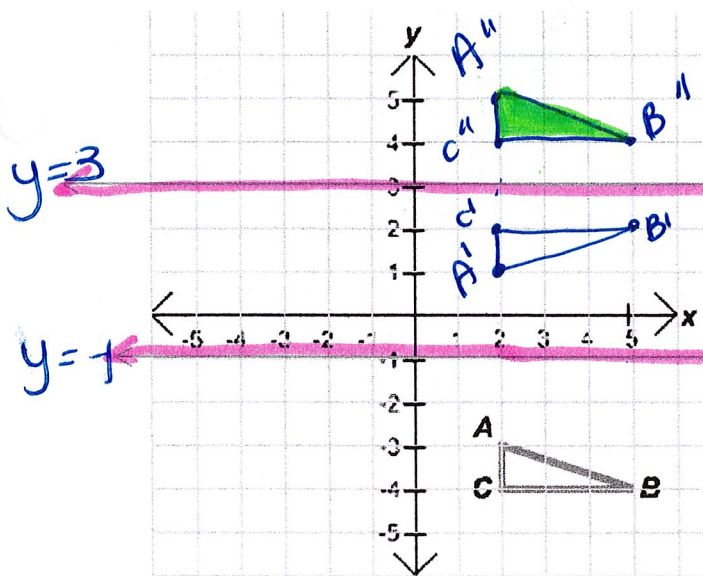
12. Rotate 90° counterclockwise about origin



$A'(4, 1)$   $B'(4, 4)$   $C'(2, 4)$   $D'(2, 1)$

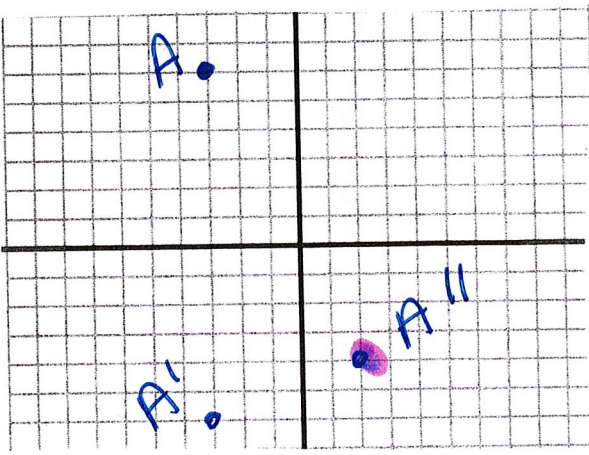
**Composition Review**

13. First reflect the triangle over  $y = -1$  and then  $y = 3$ . What single transformation could have produced the same result? What is the relationship between the slide and the reflection lines?



relationship between the slide and the reflection lines?

$y=3$   
 $y=-1$   
 up  $4 \cdot 2 = 8$   
 $3 - (-1) = 4$  then double



14. Take point A at  $(-3, 6)$ . First reflect it over the x-axis and then slide it right 5 and up 2. What are its coordinates?  $(2, -4)$

see graph paper

15. Take point A (3, 5) and rotate it  $90^\circ$  counterclockwise about the origin. Then translate it 2 right and up 1. What are the new coordinates?

(-3, 4)

16. A point is rotated  $270^\circ$  counterclockwise about the origin, and then translated left 3 up 2. Its final coordinates are (-3, 4). What were the **original** coordinates? (Think – how is this problem different from #25?)

(-2, 6)

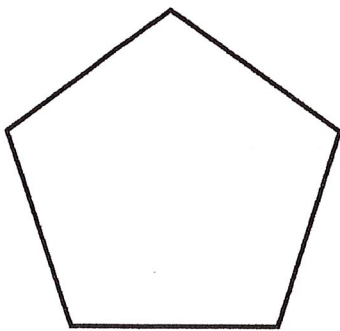
17. Take point A at (3, -4). Slide it 2 units up and then rotate it  $180^\circ$ . What are the new coordinates? (-3, 2)

18. In the coordinate plane point A is located at (4, -5). It is rotated  $90^\circ$  counterclockwise about the origin to get A'. Then A' is slid 4 units left. Where is A''? (1, 4)

### Reflectional and Rotational Symmetry

For each shape, name the number of lines of reflection (these are the lines that would take the shape onto itself), and the angle of rotational symmetry

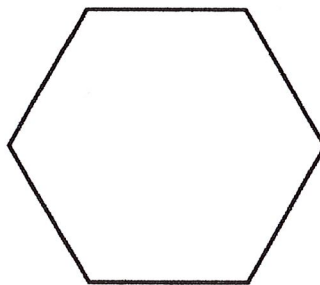
19.



5

$360 \div 5 = 72^\circ$

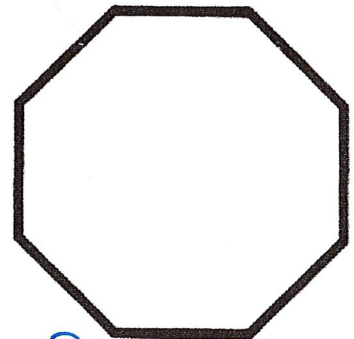
20.



6

$360 \div 6 = 60$

21.



8

$360 \div 8 = 45^\circ$

22. Name all possible angles of rotation for each polygon:

Pentagon 72, 144, 216, 288

Hexagon 60, 120, 180, 240, 300

Octagon 45, 90, 135, 180, 225, 270  
315

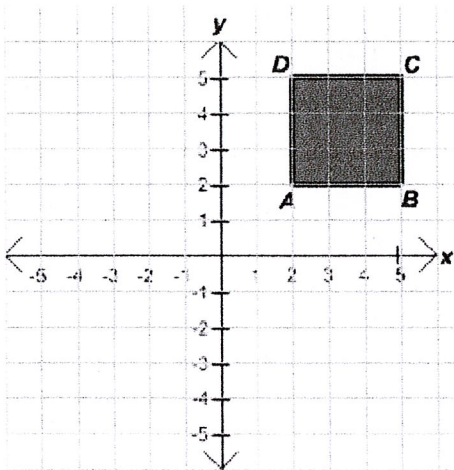
23. What does it mean for "a figure to be transformed onto itself?"

ends up where it started.

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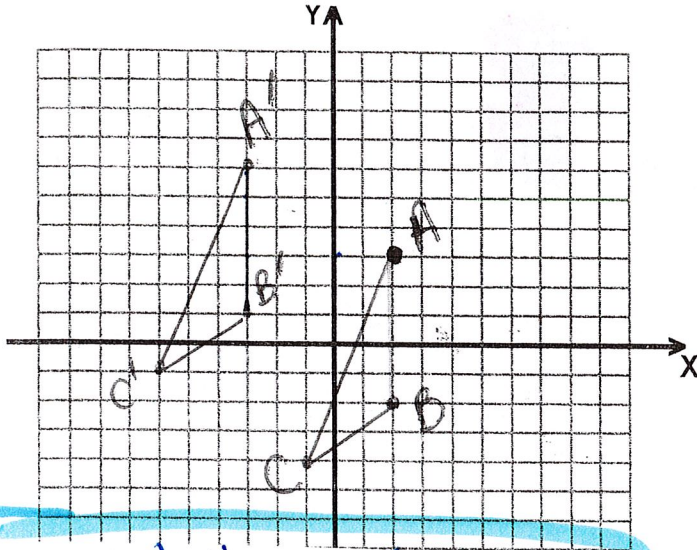
Can you come up with a transformation or a combination of transformations to carry this figure onto itself?



1) reflect over x-axis  
then 270° clock

answers may vary.

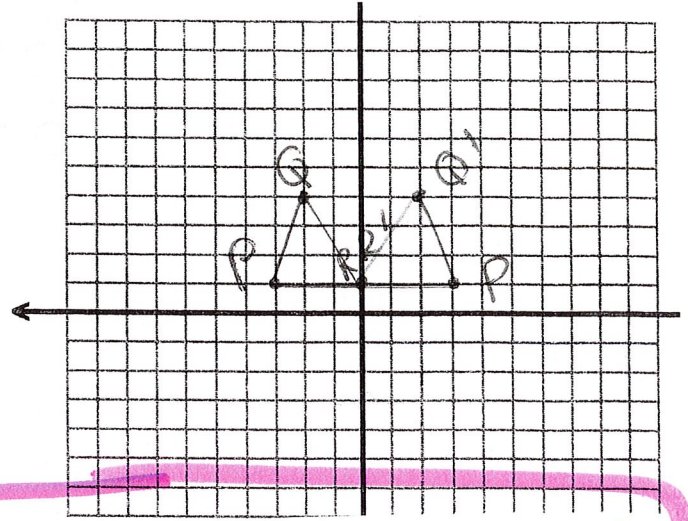
24. Name the transformation:



translation  $\langle -5, 3 \rangle$

26. Name the transformation:

25. Name the transformation:

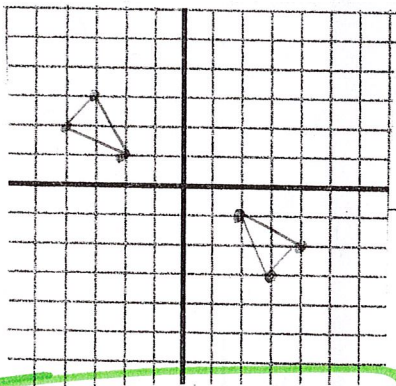


reflect over y-axis

27. Describe what happens to the

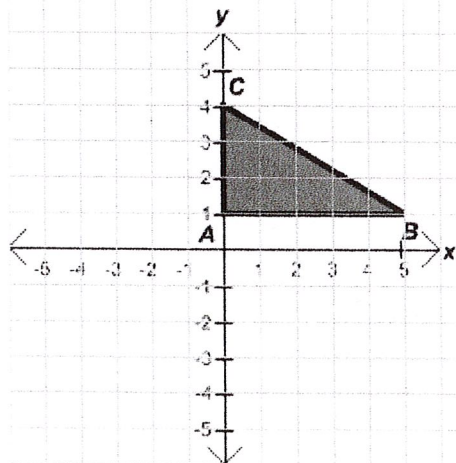
sides, angles, and orientation of a shape when it is dilated: \_\_\_\_\_

- sides: change length
- angles: congruent
- orientation: same.



rotate  $180^\circ$

28. What are the new coordinates if the image has a dilation of  $\frac{1}{4}$  with center  $(0,0)$



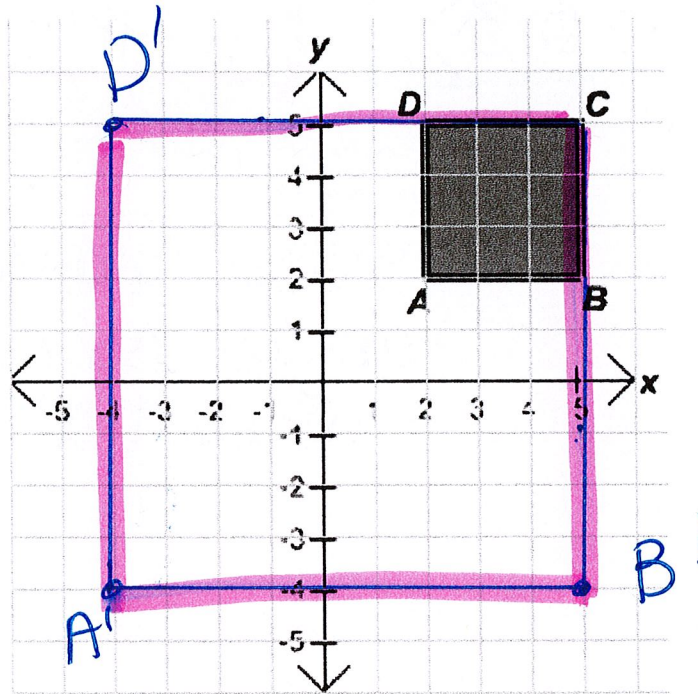
$A = (0, 1)$      $A' = (0, \frac{1}{4})$   
 $B = (5, 1)$      $B' = (1\frac{1}{4}, \frac{1}{4})$   
 $C = (0, 4)$      $C' = (0, 1)$

note  $\frac{1}{4} = .25$

29. Square ABCD is going to undergo a dilation of 3 with center C (or center (5, 5)).

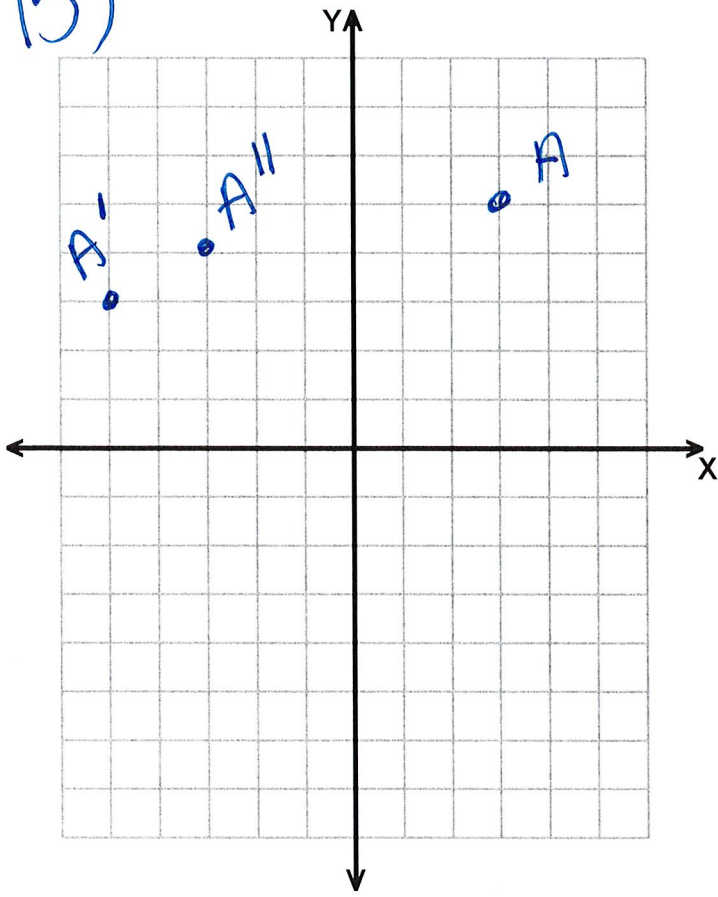
What is the length of C'B'?  $3 \cdot 3 = 9$

What is the length of C'D'?  $3 \cdot 3 = 9$

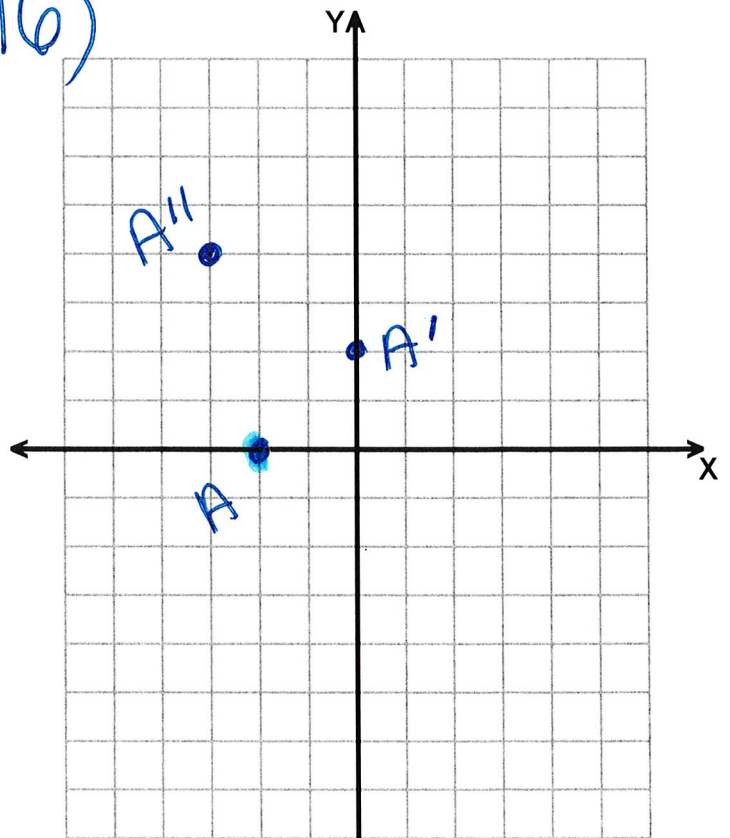




15)

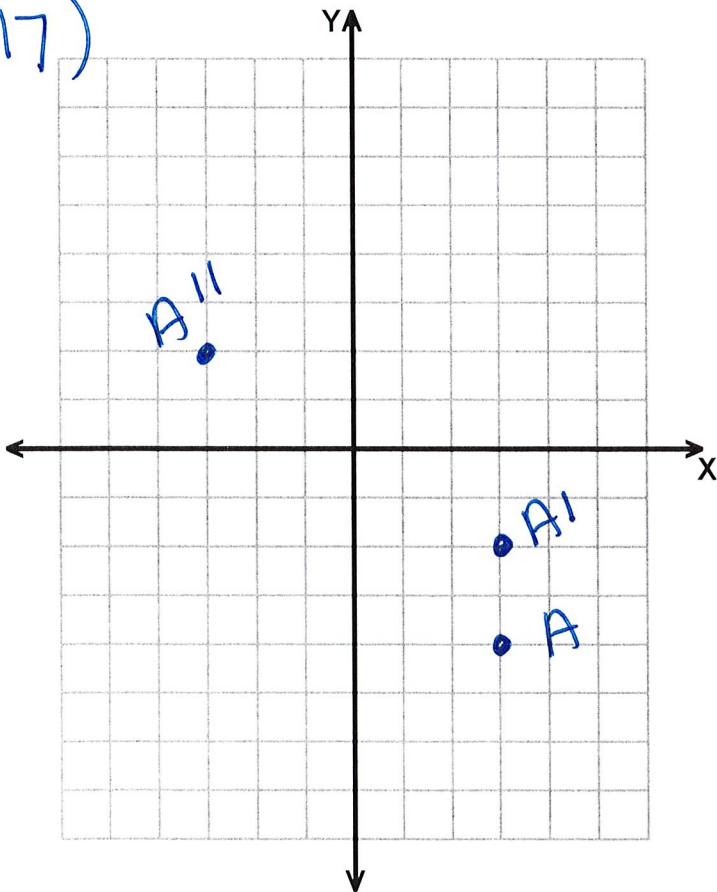


16)



- 1) undo left 3 up 2 by  $\langle 3, -2 \rangle$
- 2) rotate <sup>undo</sup>  $270^\circ$  cc by  $270^\circ$  clock.

17)



18)

