Secondary Math 1 Geometry Name________________________________

Chapter 10 Test Review

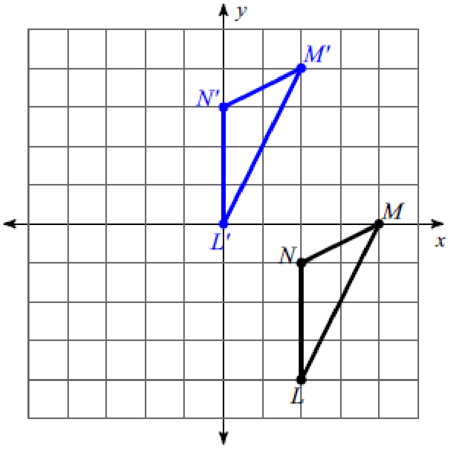
Period____

Write a rule to describe each transformation.

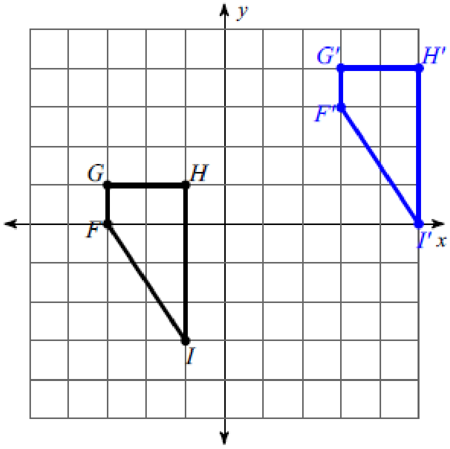
1) $P(4, 2)$ to $P'(-1, -5)$

2) $T(-3, 2)$ to $T'(-3, 0)$

3)



4)

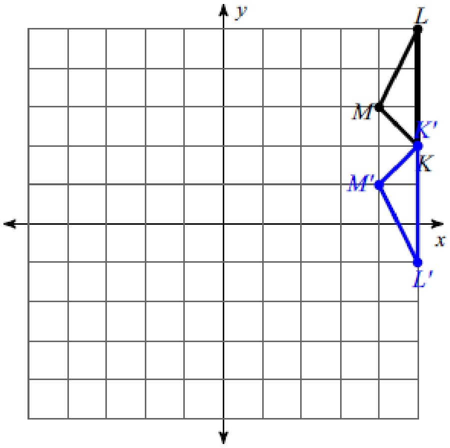


Write a rule to describe each reflection.

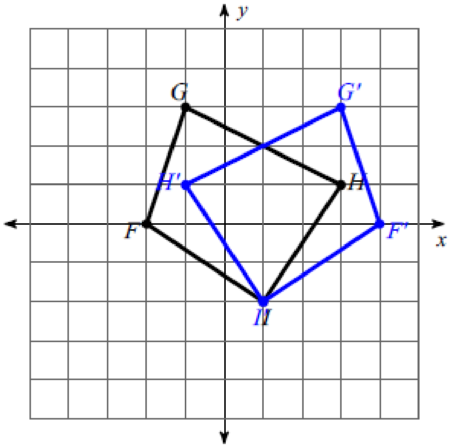
5) $R(-4, -1), S(-5, 4), T(-3, 4), U(-1, 1)$
to
$S'(-5, -4), T'(-3, -4), U'(-1, -1), R'(-4, 1)$

6) $U(1, -4), V(1, 0), W(4, -1), X(5, -2)$
to
$V'(1, 0), W'(4, 1), X'(5, 2), U'(1, 4)$

7)



8)

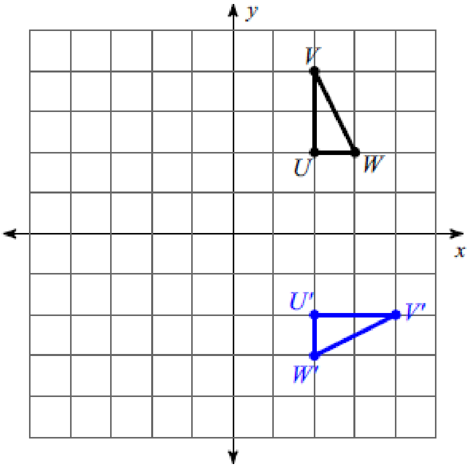


Write a rule to describe each transformation.

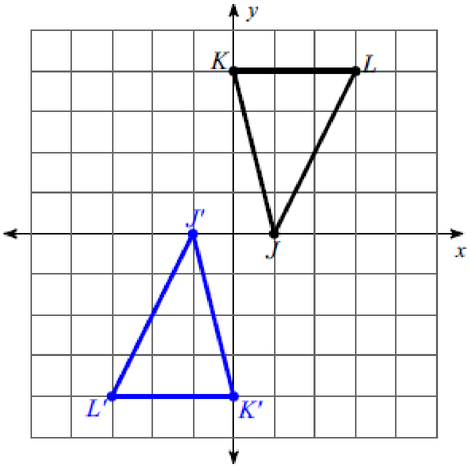
9) $G(-5, 2), H(-4, 4), I(-3, 2), J(-3, 0)$
to
$G'(-2, -5), H'(-4, -4), I'(-2, -3), J'(0, -3)$

10) $T(-2, -4), U(-3, -1), V(0, 0), W(2, -3)$
to
$T'(4, -2), U'(1, -3), V'(0, 0), W'(3, 2)$

11)

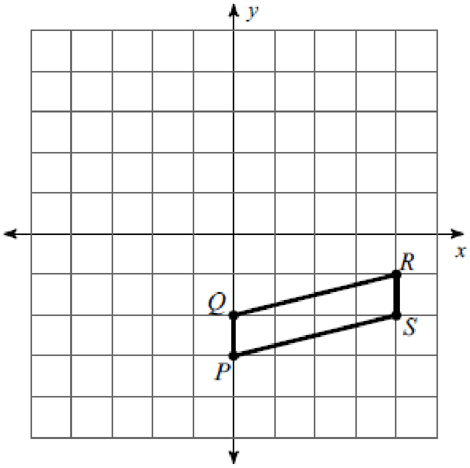


12)

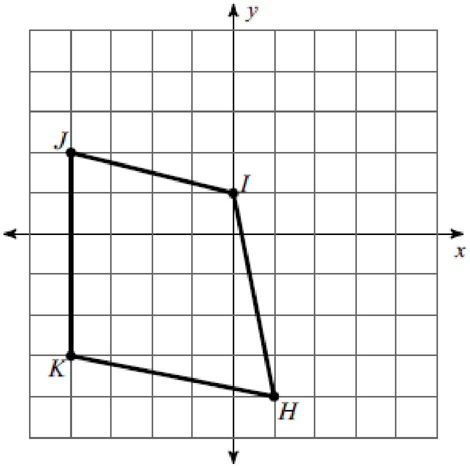


Graph the image of the figure using the transformation given.

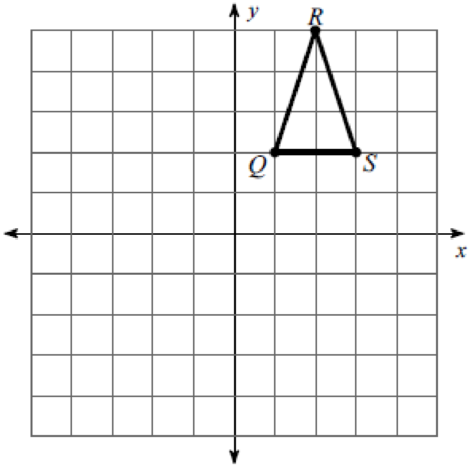
13) translation: $(x, y) \rightarrow (x - 5, y + 1)$



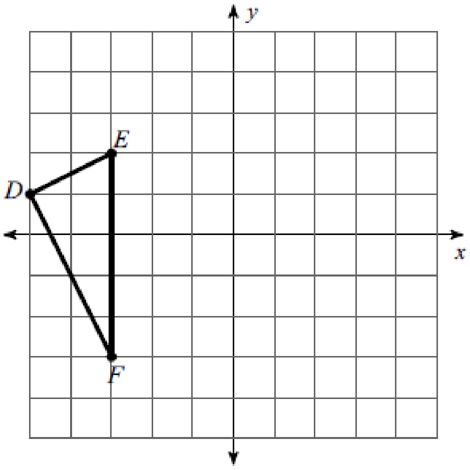
14) reflection across $x = -1$



15) rotation 90° clockwise about the origin



16) rotation 90° counterclockwise about the origin



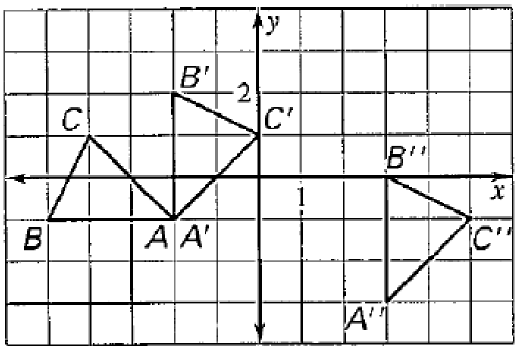
The vertices of ΔPQR are P(2, 1), Q(1, 4), and R(4, 3).
Find the coordinates of ΔP″Q″R″ after the following composition of transformations in the order given.

17. Rotate about the origin 90° counterclockwise
Dilation centered at origin with scale factor of $\frac{1}{2}$ P″(,), Q″(,), R″(,)

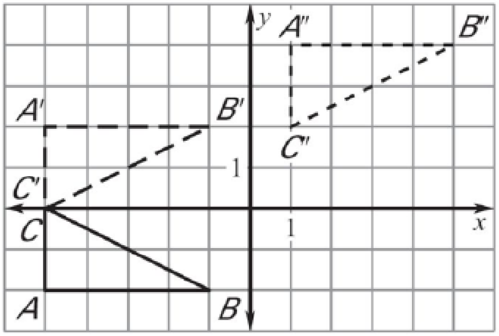
18. Dilation centered at origin with scale factor of 3
Translation: $(x, y) \rightarrow (x-6, y+3)$ P″(,), Q″(,), R″(,)

Verify that the figures are congruent by describing the composition of transformations.

19.



20.



1st transformation: ________________________________

2nd transformation: ________________________________

1st transformation: ________________________________

2nd transformation: ________________________________

A dilation maps A to A′ and B to B′. Find the scale factor of the dilation. Find the center of the dilation.

7. $A(-6,-1), A'(-3,2), B(-4,-5), B'(-2,0)$ Scale factor:____________ Center of dilation: (,)

8. $A(3,-1), A'(4,-2), B(-1,-2), B'(-4,-4)$ Scale factor:____________ Center of dilation: (,)

Determine whether the figure has rotational symmetry.
If so, describe the rotations that map the figure onto itself.
Then draw in any <u>line(s) symmetry lines</u>.

24.

Has rotational symmetry? _______

Describe rotational symmetry:

____

____

25.

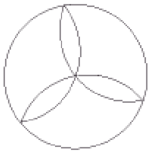
Has rotational symmetry? _______

Describe rotational symmetry:

____

____

26.



Has rotational symmetry? _______

Describe rotational symmetry:

____

____

Secondary Math 1 Geometry Name________________________________

Chapter 10 Test Review

Period____

Write a rule to describe each transformation.

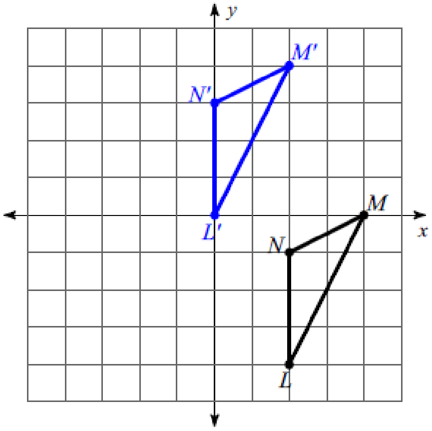
1) $P(4, 2)$ to $P'(-1, -5)$

translation: $(x, y) \rightarrow (x - 5, y - 7)$

2) $T(-3, 2)$ to $T'(-3, 0)$

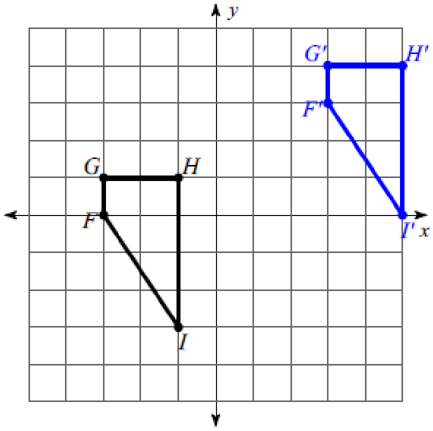
translation: $(x, y) \rightarrow (x, y - 2)$

3)



translation: $(x, y) \rightarrow (x - 2, y + 4)$

4)



translation: $(x, y) \rightarrow (x + 6, y + 3)$

Write a rule to describe each reflection.

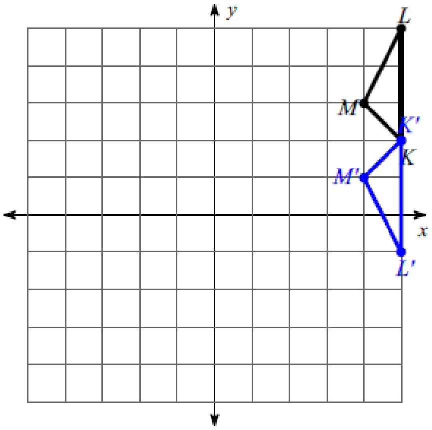
5) $R(-4, -1)$, $S(-5, 4)$, $T(-3, 4)$, $U(-1, 1)$
to
$S'(-5, -4)$, $T'(-3, -4)$, $U'(-1, -1)$, $R'(-4, 1)$

reflection across the x-axis

6) $U(1, -4)$, $V(1, 0)$, $W(4, -1)$, $X(5, -2)$
to
$V'(1, 0)$, $W'(4, 1)$, $X'(5, 2)$, $U'(1, 4)$

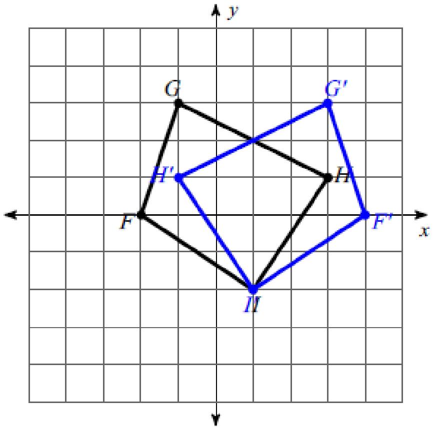
reflection across the x-axis

7)



reflection across $y = 2$

8)



reflection across $x = 1$

Write a rule to describe each transformation.

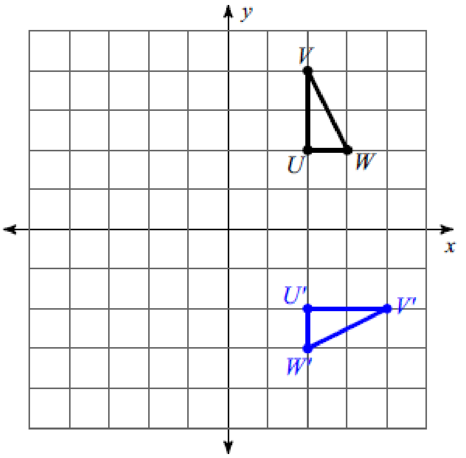
9) $G(-5, 2)$, $H(-4, 4)$, $I(-3, 2)$, $J(-3, 0)$
to
$G'(-2, -5)$, $H'(-4, -4)$, $I'(-2, -3)$, $J'(0, -3)$

rotation 90° counterclockwise about the origin

10) $T(-2, -4)$, $U(-3, -1)$, $V(0, 0)$, $W(2, -3)$
to
$T'(4, -2)$, $U'(1, -3)$, $V'(0, 0)$, $W'(3, 2)$

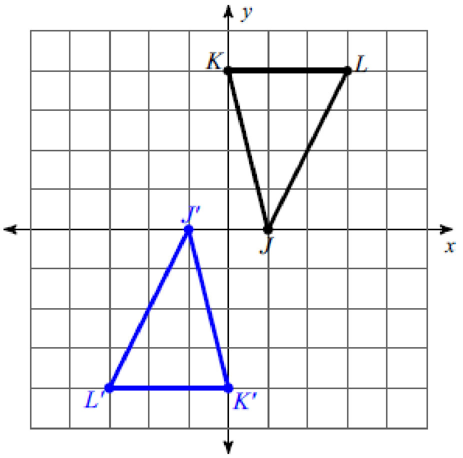
rotation 90° counterclockwise about the origin

11)



rotation 90° clockwise about the origin

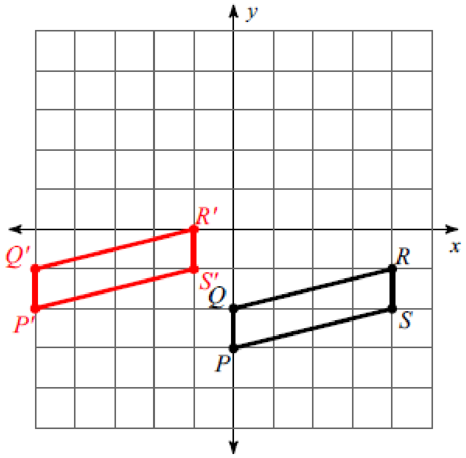
12)



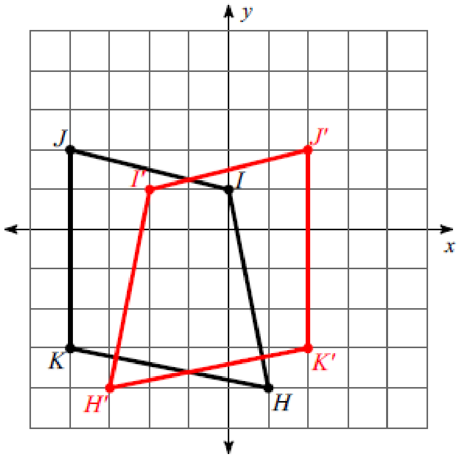
rotation 180° about the origin

Graph the image of the figure using the transformation given.

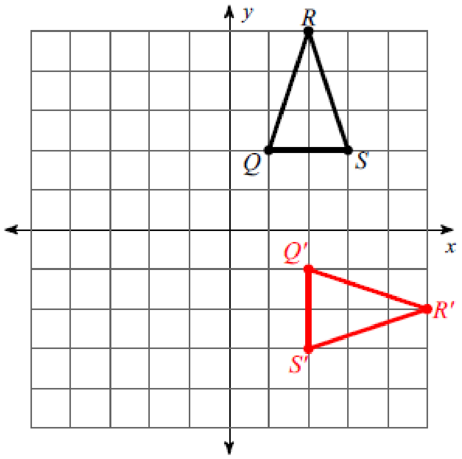
13) translation: $(x, y) \rightarrow (x - 5, y + 1)$



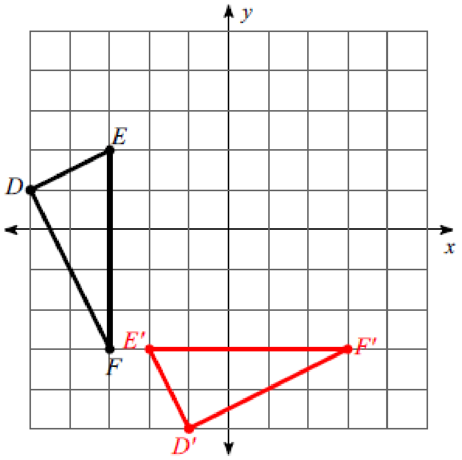
14) reflection across $x = -1$



15) rotation 90° clockwise about the origin



16) rotation 90° counterclockwise about the origin



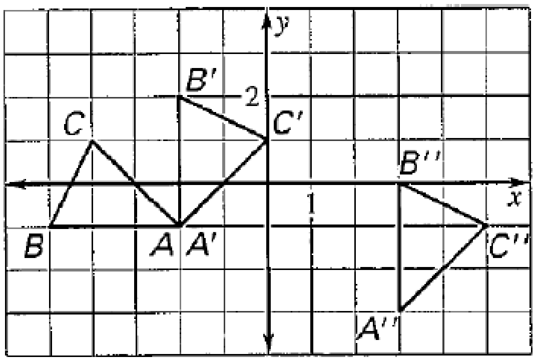
The vertices of ΔPQR are P(2, 1), Q(1, 4), and R(4, 3).
Find the coordinates of ΔP″Q″R″ after the following composition of transformations in the order given.

17. Rotate about the origin 90° counterclockwise
Dilation centered at origin with scale factor of $\frac{1}{2}$ P″$(-\frac{1}{2}, 1)$ Q″$(-2, \frac{1}{2})$ R″$(-\frac{3}{2}, 2)$

18. Dilation centered at origin with scale factor of 3
Translation: $(x, y) \to (x - 6, y + 3)$ P″$(0, 6)$ Q″$(-3, 18)$ R″$(6, 12)$

Verify that the figures are congruent by describing the composition of transformations.

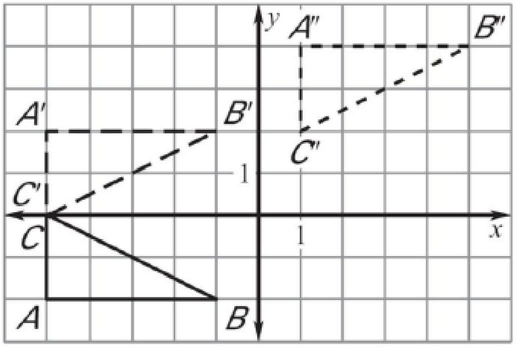
19.



1st transformation: Rotate 90°clockwise about $(-2, -1)$

2nd transformation: Translation: $(x, y) \to (x + 5, y - 2)$

20.



1st transformation: Reflect across the x-axis

2nd transformation: Translation: $(x, y) \to (x + 6, y + 2)$

A dilation maps A to A′ and B to B′. Find the scale factor of the dilation. Find the center of the dilation.

7. $A(-6, -1), A'(-3, 2), B(-4, -5), B'(-2, 0)$ Scale factor: $k = \frac{1}{2}$ Center of dilation: $(0, 5)$

8. $A(3, -1), A'(4, -2), B(-1, -2), B'(-4, -4)$ Scale factor: $k = 2$ Center of dilation: $(2, 0)$

Determine whether the figure has rotational symmetry.
If so, describe the rotations that map the figure onto itself.
Then draw in any line(s) symmetry lines.

24.

Has rotational symmetry? YES

Describe rotational symmetry:

rotation of $90°$, $180°$, *and* $270°$

about its center

25.

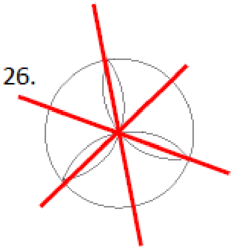
Has rotational symmetry? NO

Describe rotational symmetry:

____

____

26.



Has rotational symmetry? YES

Describe rotational symmetry:

rotation of $120°$, *and* $240°$

about its center