Geometry Unit 1 – Segments and Transformations Review
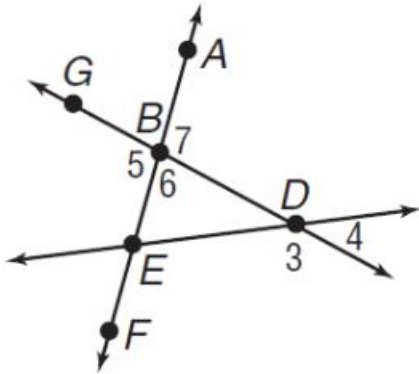
Name _____

Hour _____

Directions: All work must be shown to receive full credit.

Use the figure to answer questions 1-4.

1) Name <u>all</u> angles that have B as a vertex.

2) Name a pair of supplementary angles.

3) Name a pair of vertical angles.

4) Name a linear pair.

5) Name all the different ways to name line $\overleftrightarrow{AB}$.

6) Simplify the radical: $\sqrt{192}$

7) Find the value of the variable and *ST* if *S* is between *R* and *T*. Let RS= 16, ST = 2x, RT = 5x + 10. You must start this problem with a geometry step. Draw a diagram, show all of your work, and justify each step.
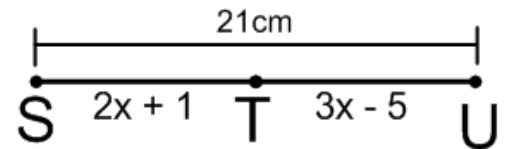
_____

_____

8) Find the value of x and *SR* if *R* is between *S* and *T*. *SR* = 3x, *RT* = 2x + 1, *ST* = 6x − 1. You must start this problem with a geometry step. Draw a diagram, show all of your work, and justify each step.

_____

_____

9) Find the value of x and $\overline{ST}$ using the figure to the right. You must start the problem with a geometry step, show all of your work, and justify each step.
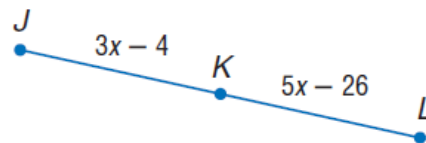
21cm

S   2x + 1   T   3x - 5   U

_____

_____

10) Find x and the measure of $\overline{JK}$ if K is the midpoint of $\overline{JL}$. You must start the problem with a geometry step, show all of your work, and justify each step.

J
3x − 4
K
5x − 26
L

_____

_____

8) Find XY if Y is the midpoint of $\overline{XZ}$, $XY = 2x + 3$ and $YZ = 6 - 4x$. Draw a diagram to help you. You must start the problem with a geometry step, show all of your work, and justify each step.

_____

9) Find the <u>coordinates of the endpoint S</u> if T is the midpoint of RS and T(3, 4) and R(-2, 3). You must show work.
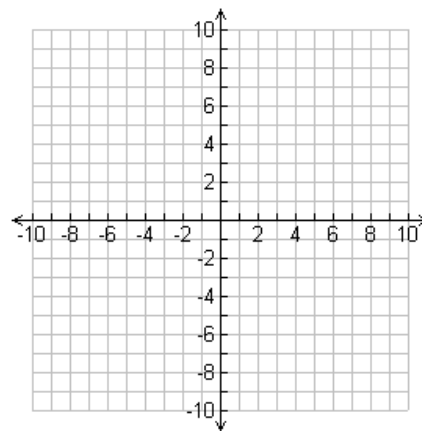
_____

10) Find the exact distance between M(3, 5) and N(7, 9). Write your answer as a simplified radical.

_____

Find the distance, midpoint, and slope of each segment. You must show work, simplify all radicals and fractions!

11) G(-10, 2), H(-7, 6)

Distance: _____

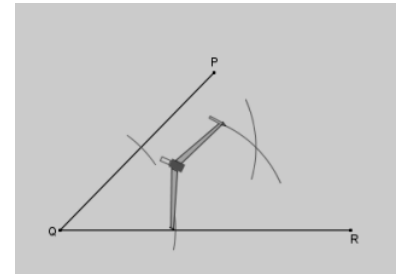Midpoint:_____

Slope: _____

12) J(4, 2), K(8, -6)
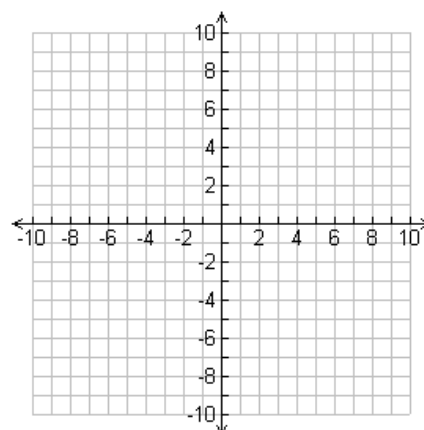
Distance: _____

Midpoint:_____
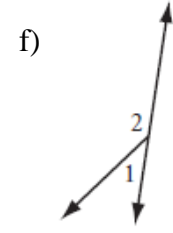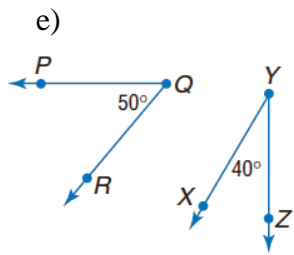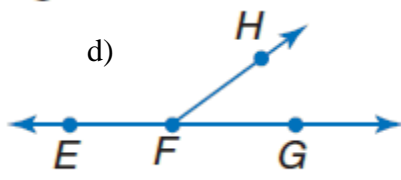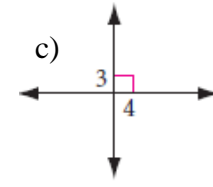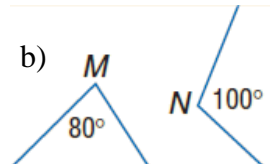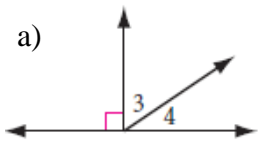
Slope: _____

13) D(10, 20), E(-10, -20)

Distance: _____

Midpoint:_____

Slope: _____

11) A student is completing the following construction. What construction are they making and what is true about the figure?

12) Classify all that apply: adjacent, vertical, linear pairs, complementary, supplementary, right angle and/or congruent.

a)

b)

c)

d)

e)

f)

13) Draw $\overline{FE} \perp \overline{DC}$

14) Draw $\overline{WX} \cong \overline{YZ}$

15) Draw $\angle QRS$ and $\angle QRT$ are a linear pair

16) Draw $\overleftrightarrow{AB}$ is a $\perp$ bisector of $\overline{ST}$

17) Draw $\overrightarrow{ET}$ is an angle bisector of $\angle REO$

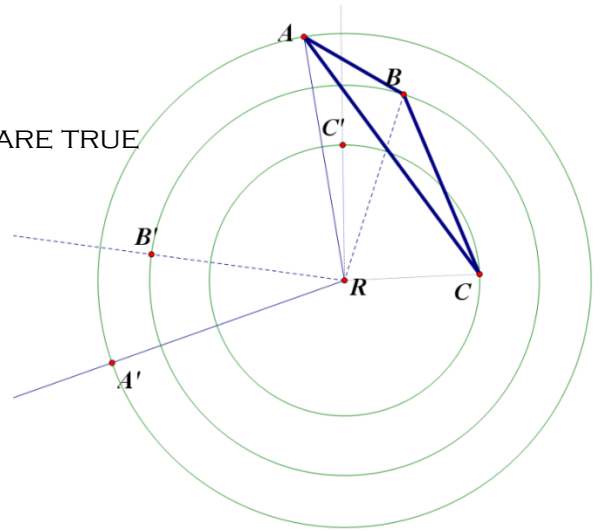18) Draw $\overrightarrow{QR}$ is a segment bisector of $\overline{ST}$

CONSTRUCTIONS OF TRANSFORMATIONS –
YOU WILL NEED TO CONSTRUCT TRANSFORMATIONS!!!!!!!!!!!

19. FINISH THE CONSTRUCTION, THEN USE THE FIGURE TO THE RIGHT
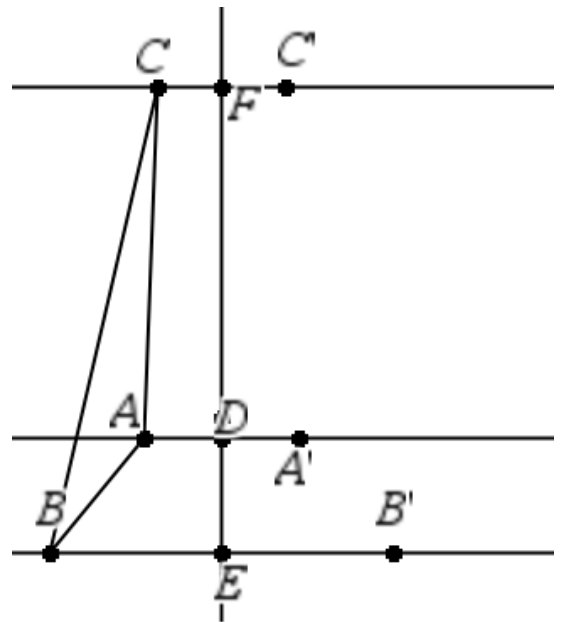
A. NAME THE TYPE OF TRANSFORMATION

B. NAME ALL PROPERTIES OF THE CONSTRUCTION THAT ARE TRUE

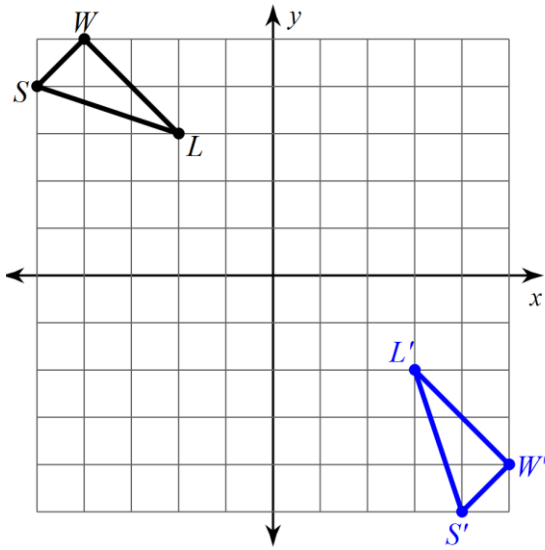20. FINISH THE CONSTRUCTION, THEN USE THE FIGURE TO THE RIGHT

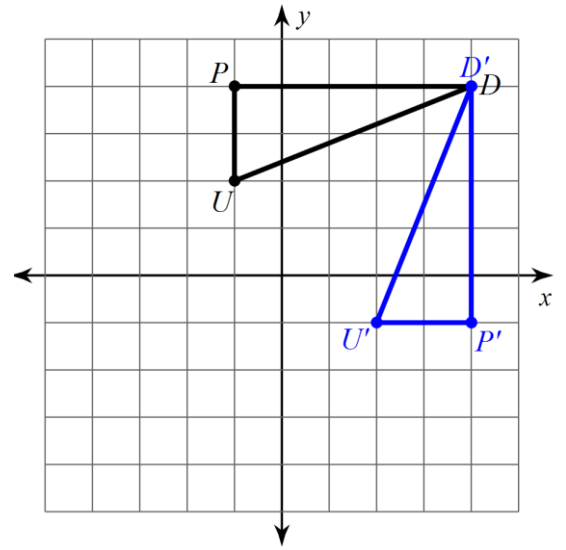A. NAME THE TYPE OF TRANSFORMATION

B. NAME ALL PROPERTIES OF THE CONSTRUCTION
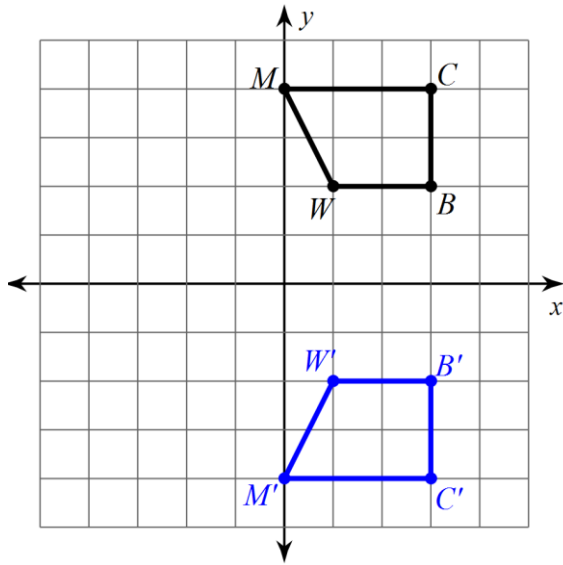
Draw in the line of reflection for 21 through 26.

21.

22.

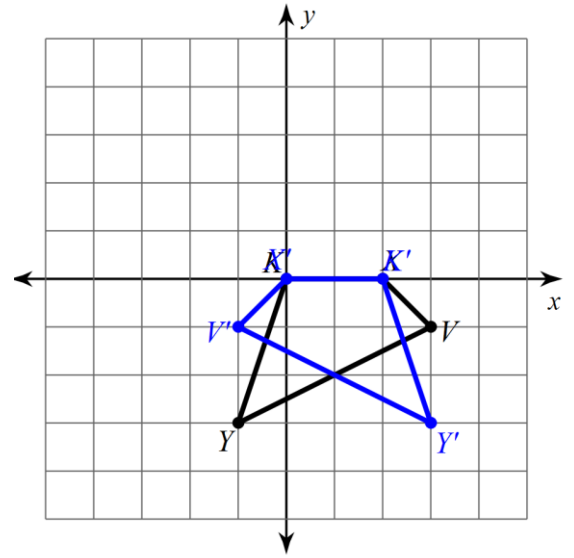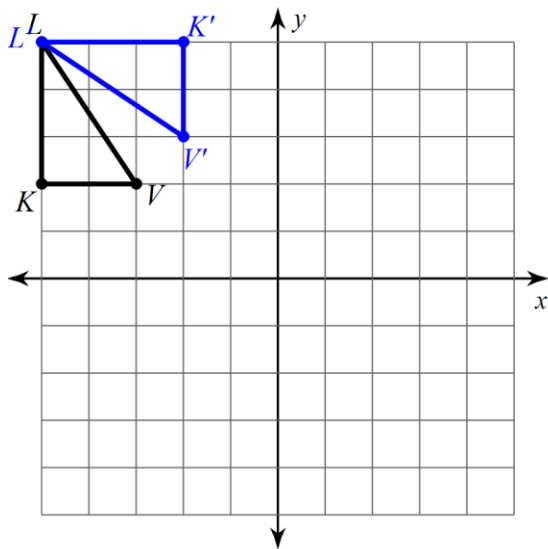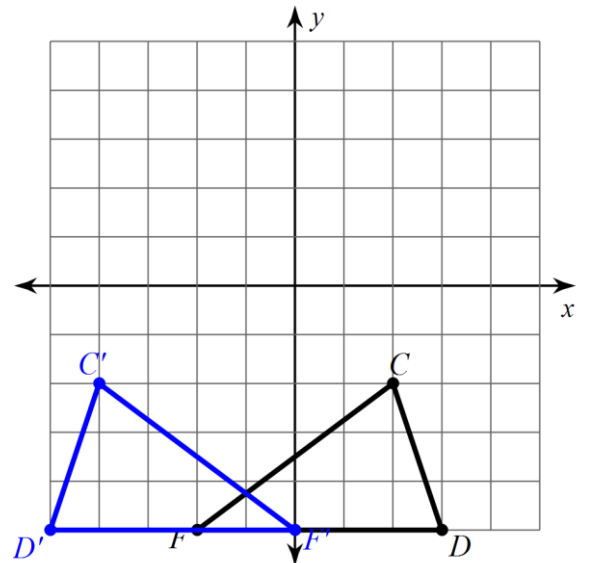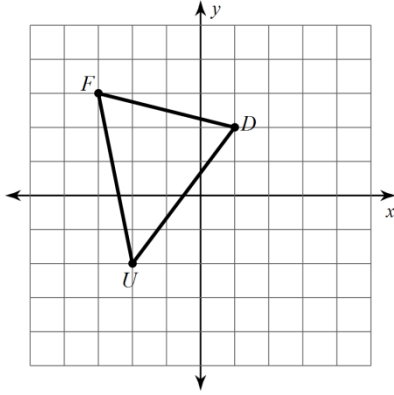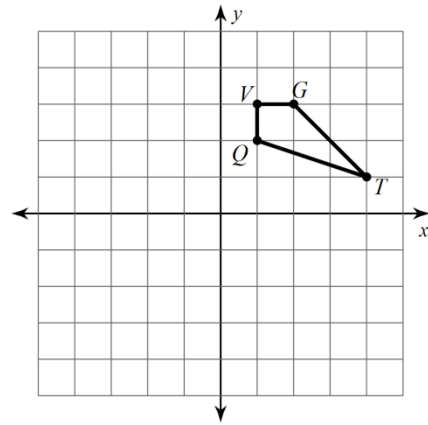23.

24.

25.

26.

Graph the transformation for 27 through 34. If it is a translation, write the rule for the translation.
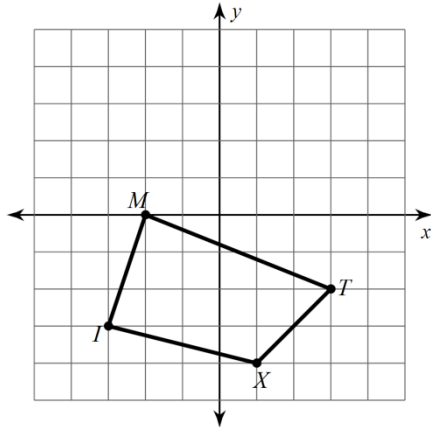
27. $(x, y) \rightarrow (x + 2, y + 1)$
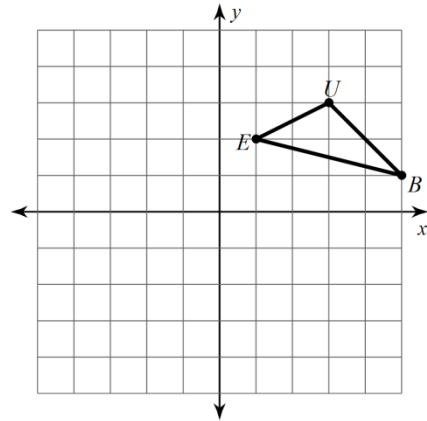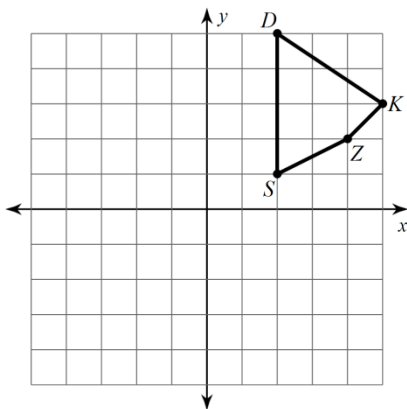
28. reflection across $y = x$

29. rotation 90° counterclockwise about the origin
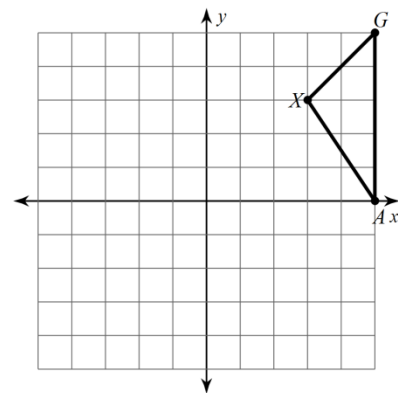
30. rotation 90° clockwise about the origin
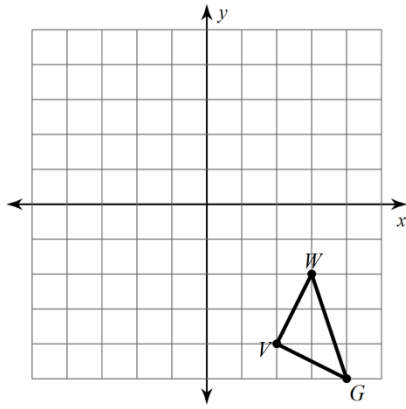
31. rotation 180° about the origin
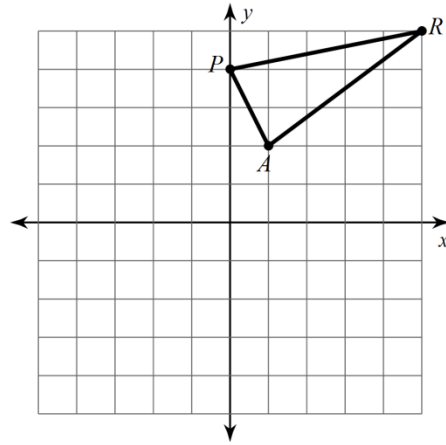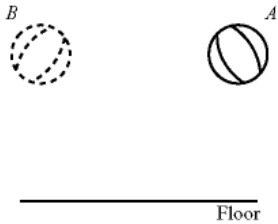
32. reflection across $y = 2$

33.   reflection across $x = 1$

34. $(x, y) \rightarrow (x - 5, y - 2)$

35. In a basketball game, Roger is standing at position A and he bounces the ball to Edwin standing at position B. Copy the diagram and sketch the path the ball must travel after being bounced to Edwin by Roger.

Floor

36.   Find the slopes of lines. Simplify all fractions, if possible.

S(6, 5),   T(-4, 3)   X(-4,2),   Y(-3,-3)

Slope of ST: _____
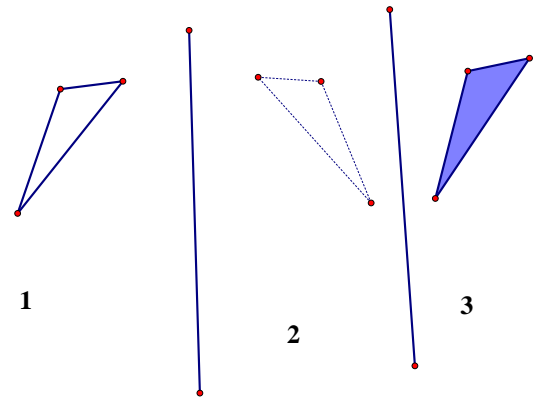
Slope of XY: _____

37. The composite of reflections over two parallel
    lines results in a _____.

From 1 to 2 the transformation performed is : _____

From 2 to 3 the transformation performed is : _____

From 1 to 3 the transformation performed is : _____

1   2   3
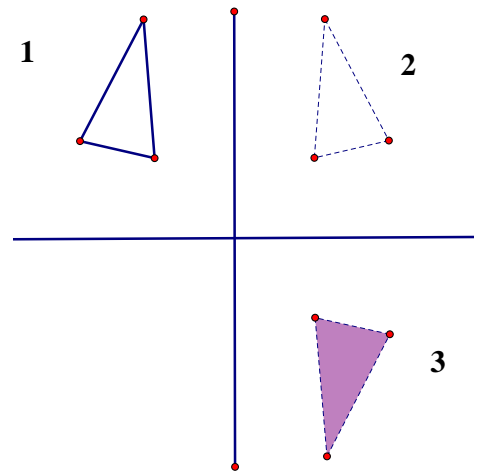
38. The composite of reflections over two intersecting lines results in a _____.
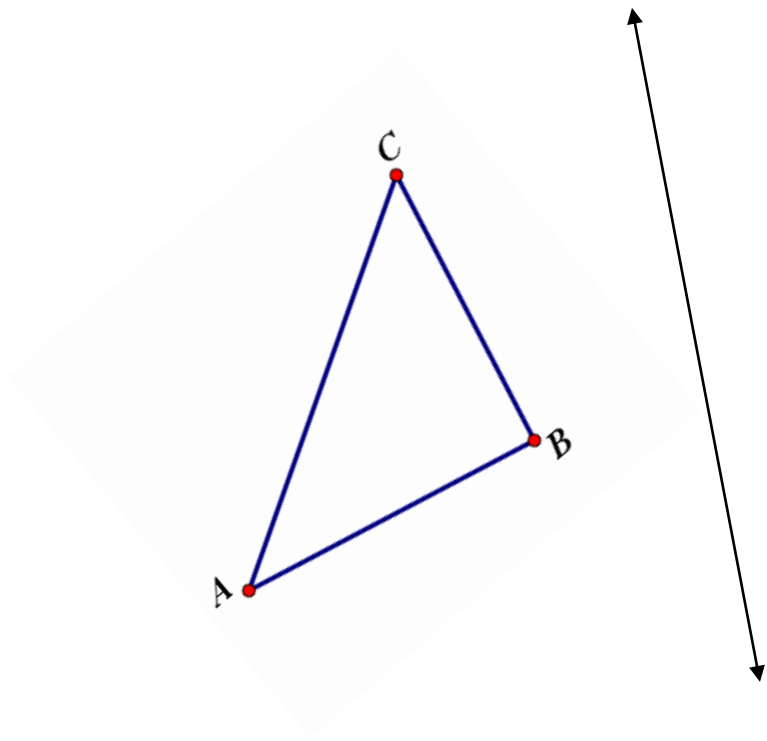
This is a composite of transformations.

From 1 to 2 the transformation performed is : _____

From 2 to 3 the transformation performed is : _____

From 1 to 3 the transformation performed is : _____

1   2

3

39. Reflect the figure over the given line.

40. Rotate the figure 110 degrees counterclockwise around point R