Name _____ Geometry Chapter 9 Study Guide

Know the definitions for the following terms.

Transformation Translation Reflection Rotation Dilation Pre – Image
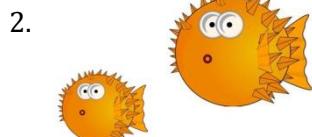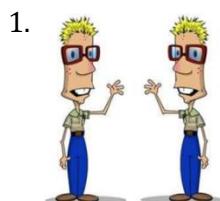
Image Rigid Motion/Isometry Scale Factor Composition Glide Reflection
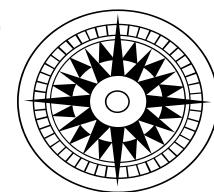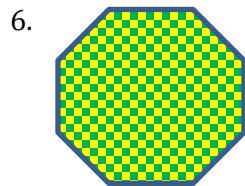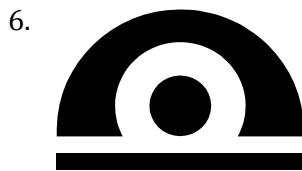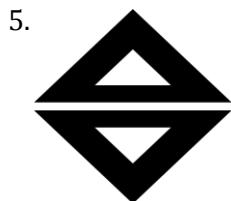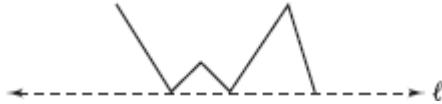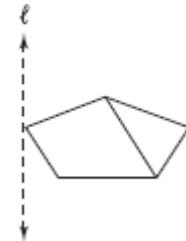
Identify each type of transformation, then determine if it is an isometry and explain why it is or why it isn't an isometry.

1.   2.   3.   4.

Symmetry: Write an H for horizontal, V for vertical, R for rotational (also give angle if R), or none.

5.   6.   6.   8.
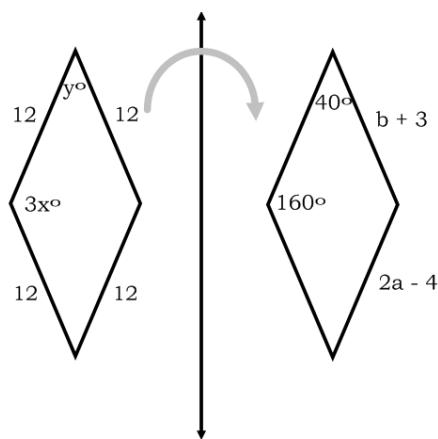
Draw each Transformation.
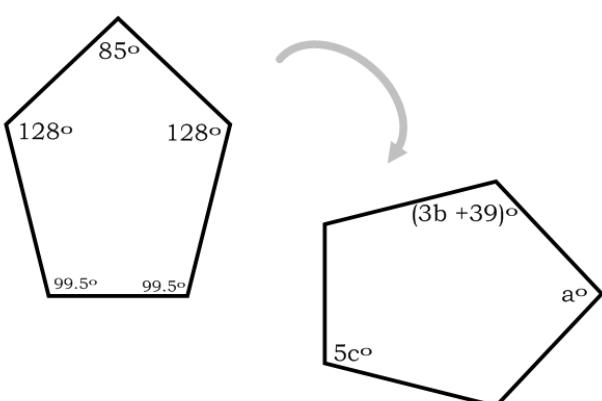
9. Reflection over line *l*


10. Reflection over line *l*

Given the transformation is an isometry, find the value of each variable.

11.
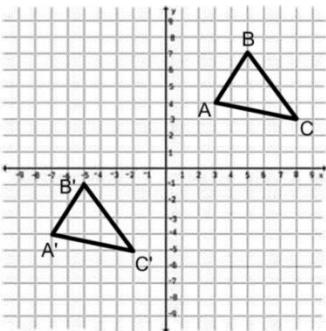
12.
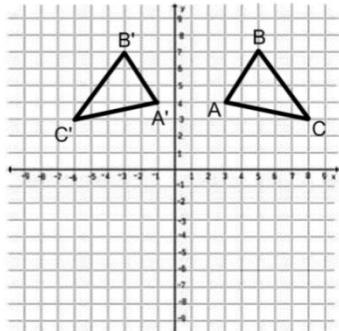
**Write the rule for each transformation**.
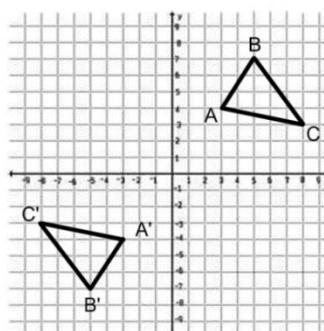
13. Rule_____

14. Rule_____
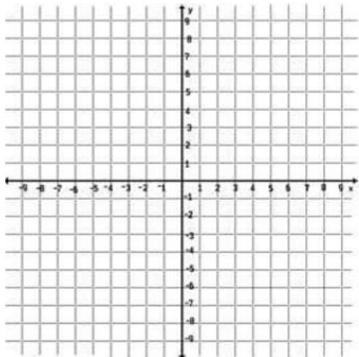
15. Rule_____
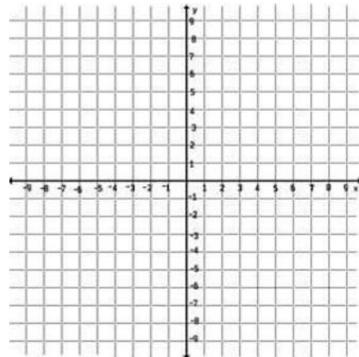
Graph $\triangle ABC$ with vertices $A(3, 4)$, $B(-2, 5)$ and $C(6, -3)$, then graph the image of $\triangle ABC$ with the given transformation and state the coordinates of the vertices of the image.

16. $R_{y\text{-axis}}(ABC)$
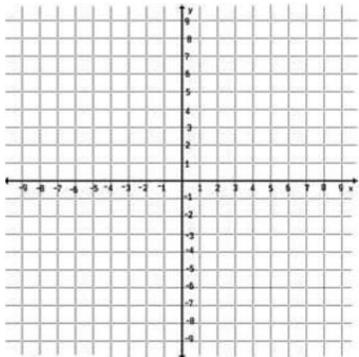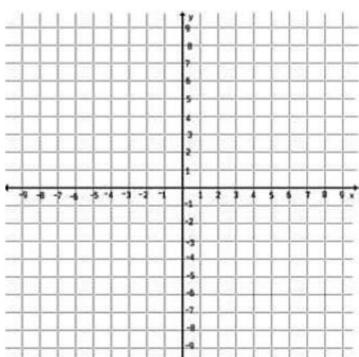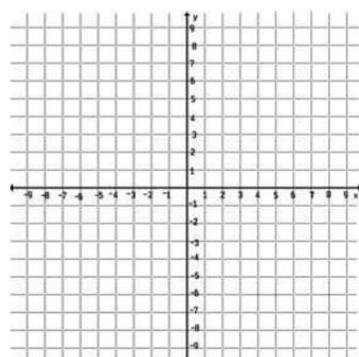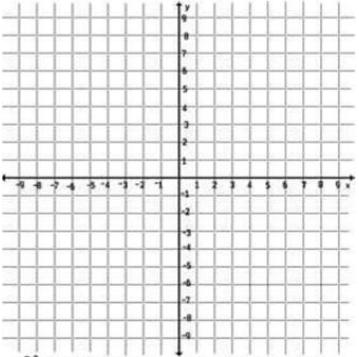
17. $T_{<-5, 3>}(ABC)$

18. $r_{(90°, O)}(ABC)$

A'_____ B'_____ C'_____

A'_____ B'_____ C'_____

A'_____ B'_____ C'_____

19. $T_{<1, -4>}(ABC)$

20. $r_{(270°, O)}(ABC)$

21. $R_{y=1}(ABC)$

A'_____ B'_____ C'_____

A'_____ B'_____ C'_____

A'_____ B'_____ C'_____

22. $R_{x=2}(ABC)$

23. $T_{<-3, -2>}(ABC)$

24. $r_{(180°, O)}(ABC)$

A'_____ B'_____ C'_____

A'_____ B'_____ C'_____

A'_____ B'_____ C'_____
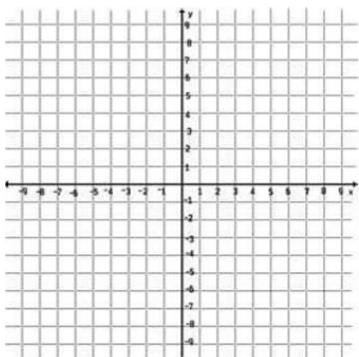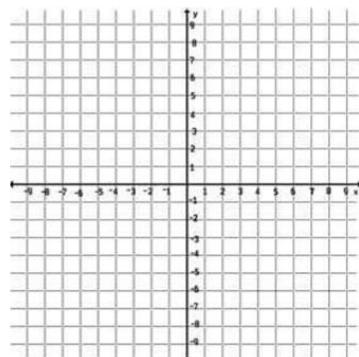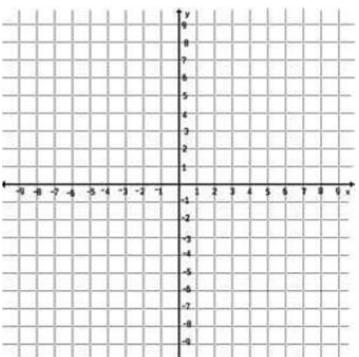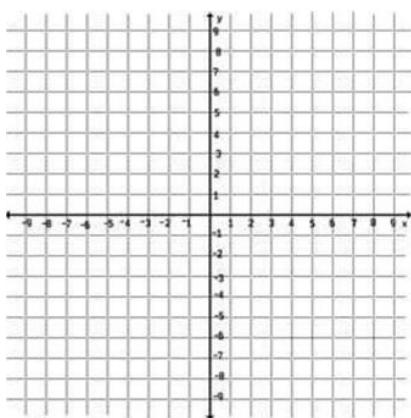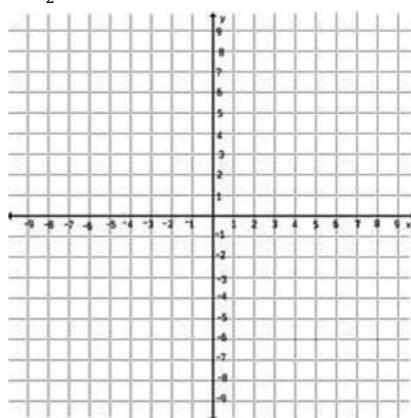
**Graph △ABC with vertices A(−3, 3), B(3, −3) and C(2, 3), then graph the image of △ABC with the given transformation. State the coordinates of the vertices of the image.**

25. D₃ (ABC)

A'_____ B'_____ C'_____

26. $D_{\frac{1}{2}}$ (ABC)

A'_____ B'_____ C'_____
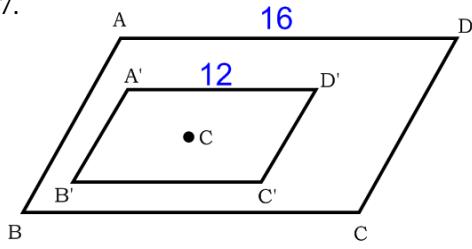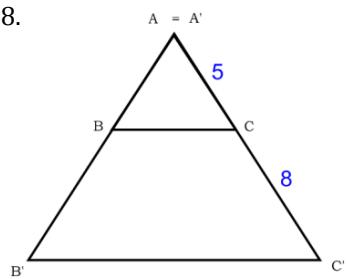
**Determine if each dilation shown is an enlargement or a reduction, then find the scale factor k.**

27.

A 16 D

A' 12 D'

•C

B' C'

B C

28.

A = A'

5

B C

8

B' C'
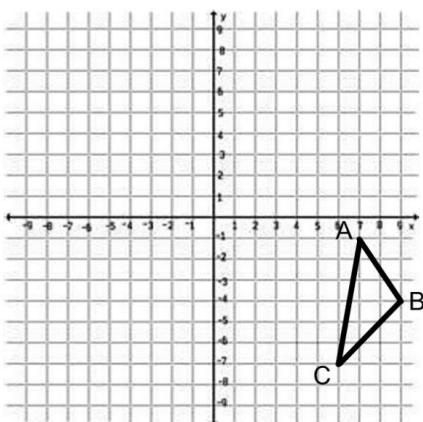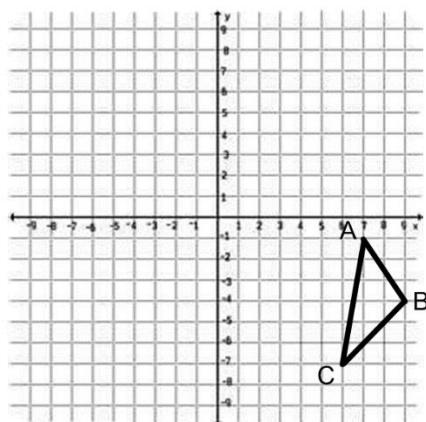
Graph the images of △ABC after each composition of transformations. State the coordinates of the vertices of the image.

29. $(R_{y-axis} \circ T_{<-3,\ 1>})(\triangle ABC)$

A

B

C

A_____ A'_____ A"_____

B_____ B'_____ B"_____

C_____ C'_____ C"_____

30. $(r_{(90°,O)} \circ R_{y=3})(\triangle ABC)$

A

B

C

A_____ A'_____ A"_____

B_____ B'_____ B"_____

C_____ C'_____ C"_____