10F LEAPING LIZARDS! Name: _____ Per: _____

SHOW YOUR WORK AND WORK IN PENCIL

Find out where the lizard will end up with the following transformations. The original lizard anchor points are:

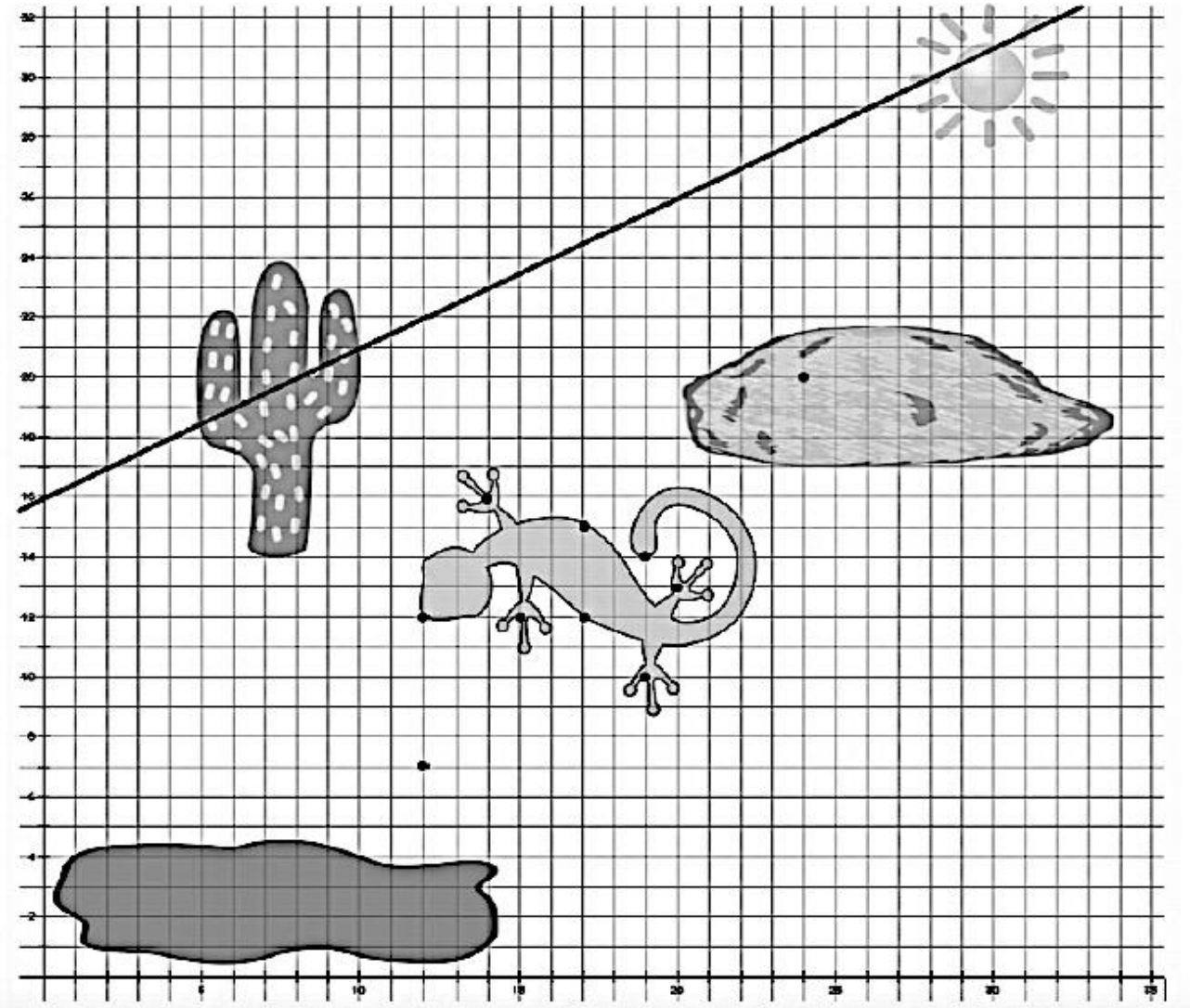
$\{N(12,12), LFrFoot\ (15,12), LBack(17,12), LBFoot\ (19,10), T(19,14), RBFoot\ (20,13), RB\ (17,15), RFrFoot(14,16)\}$

After each transformation **plot and label the new points** for each transformation.

1. **Sliding Lizard:** **Translate** the original lizard so the point at the tip of its nose is located at $(24,20)$, making the lizard appears to be sunbathing on the rock. Write the translation rule: _____. Find the points of LFF' _____ LB' _____ LBF' _____ T' _____ RBF' _____ RB' _____ RFF' _____

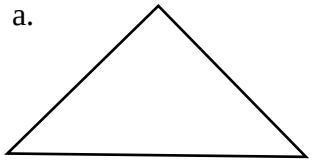
2. **Flipping Lizard:** **Reflect** the lizard about the given line $y = \frac{1}{2}x + 16$. Draw lines to connect each anchor point to the new point. What is the slope of the line that connects N to N''? _____ What is the **distance** from N to the line of reflection? _____ What's the distance from the line to N''?_____ What is the total distance from N to N''? _____ (The lizard will go off the of grid)

3. **Spinning Lizard:** **Rotate** the lizard 90^{O} about point $(12,7)$. Draw lines to connect each anchor point to the new point. What is the slope between LF and the point of rotation? _____ What is the slope between LF'' and the point of rotation? _____



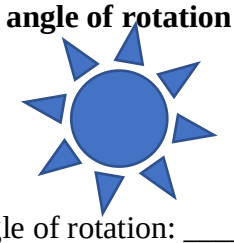
4. Draw **ALL lines of symmetry** and find the **angle of rotation** for the figures:

a.



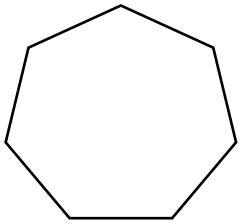
Angle of rotation: _____

b



Angle of rotation: _____

c.

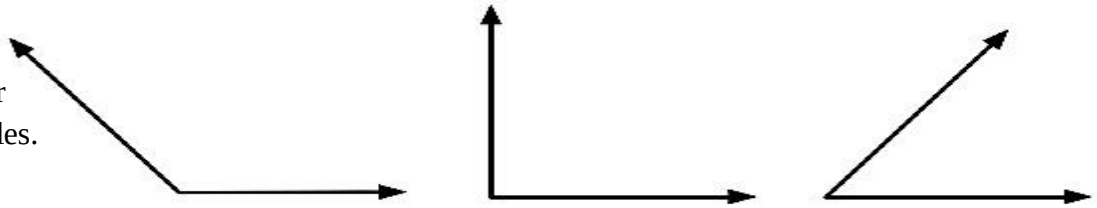


Angle of rotation: _____

# of Diagonals: _____

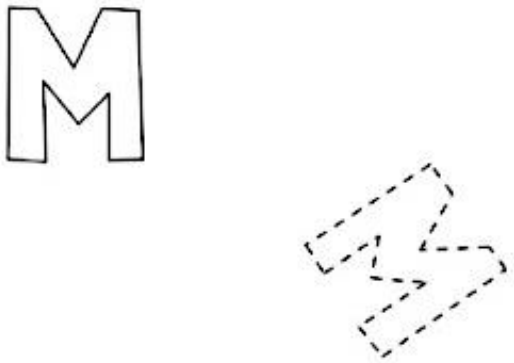
5. If the Triangle was equilateral . . . How many lines of symmetry would it have? _____ What would be the angle of rotation? _____

6. **CONSTRUCT** angle bisectors for the following angles.

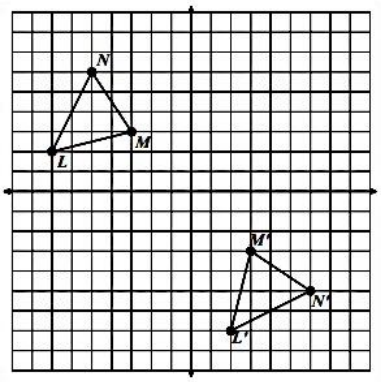


7. **CONSTRUCT** the **line of reflection** for the following figures.

a.



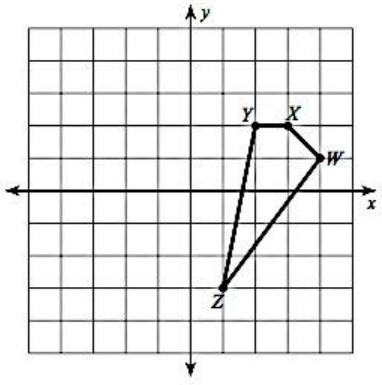
b.



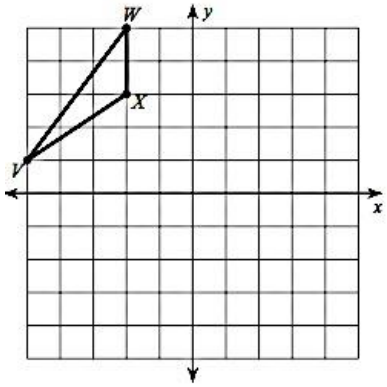
c. Calculate the line of reflection for b.

8. **Perform the following translation and label your new image.**

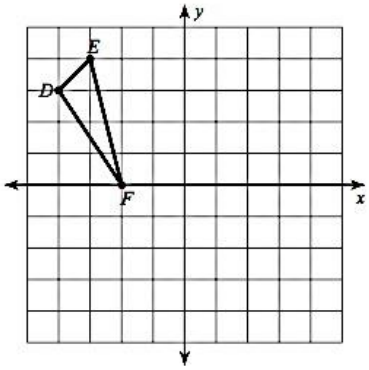
a. Rotate 180° about $(0,0)$



b. Rotate 90° about $(-2,1)$



c. Reflect over $y = 2x + 1$



9. You take out a loan for $3,300 at 7% interest and agree to pay it off in one lump sum in 10 years.

a. Write the explicit equation if it is **simple interest.**

b. How much will you owe in 10 years (if simple interest)?

c. Write the explicit equation if it is **compound interest.**

d. How much will you owe in 10 years (compound interest)?