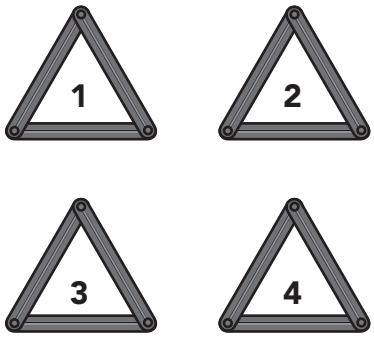
Name _____

Use AngLegs to model each set of shapes. Complete each statement with the phrase "is" or "is not."

1.

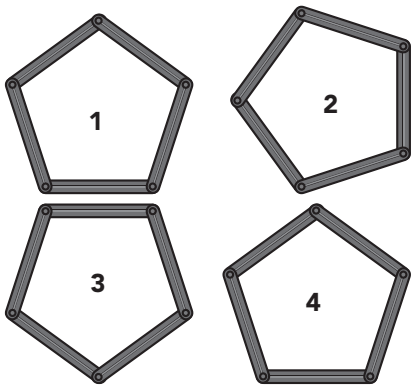


Triangle 1 _____ congruent to Triangle 2.

Triangle 2 _____ congruent to Triangle 3.

Triangle 3 _____ congruent to Triangle 4.

2.



Pentagon 1 _____ congruent to Pentagon 4.

Pentagon 3 _____ congruent to Pentagon 2.

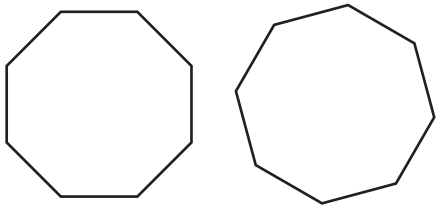
Pentagon 4 _____ congruent to Pentagon 3.

Using AngLegs, build three figures that are congruent to each other and one model that is not congruent to the others. Sketch the models. Write three statements about the figures' congruency.

3.

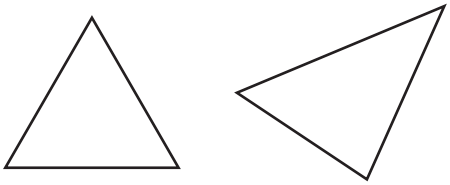
Tell if each pair of figures are congruent.

4.



_____

5.



_____

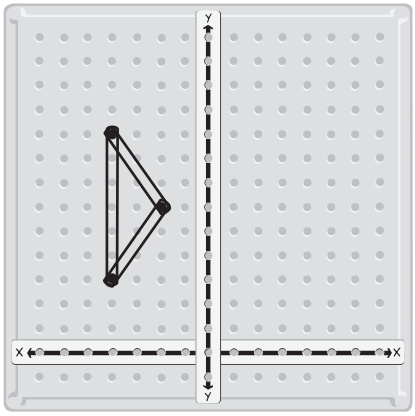
Name _____

Challenge! Why can you use the transformation of a slide to determine if your figures are congruent? Explain the process. Draw a picture to help.

Name _____

Use an XY Coordinate Pegboard to model each triangle. Write the coordinates of the vertices. Reflect over the axis shown. Name the coordinates of vertices for the new triangle.

1.



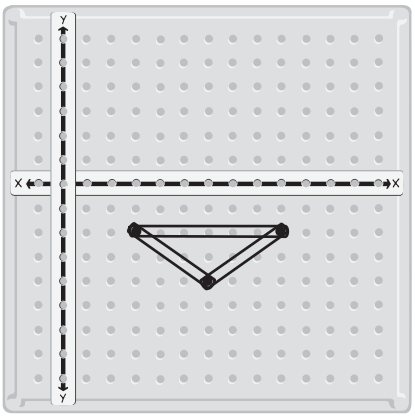
vertices of triangle

_____

vertices of reflected triangle

_____

2.



vertices of triangle

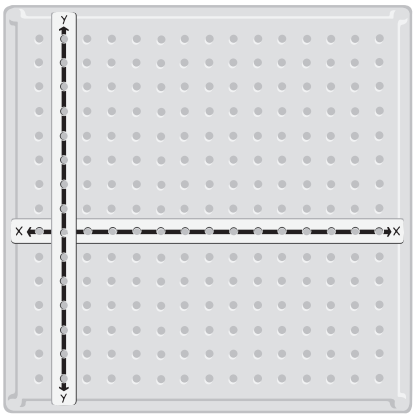
_____

vertices of reflected triangle

_____

Using an XY Coordinate Pegboard, build each polygon. Then model each reflection. Draw the reflection on the grid below. Name the coordinates of the new polygon. How do the coordinates change?

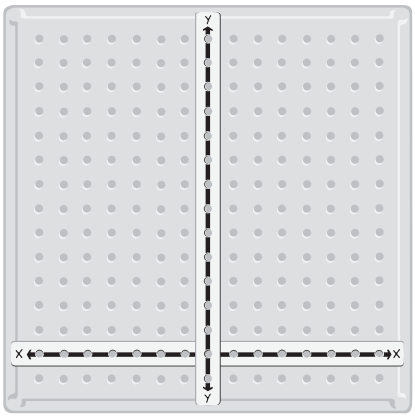
3. rectangle with vertices at (2, 3), (2, 5), (4, 3), (4, 5) reflected over the *x*-axis



vertices of reflected triangle

_____

4. triangle with vertices at (3, 0), (4, 5), (1, 13) reflected over the *y*-axis



vertices of reflected triangle

_____

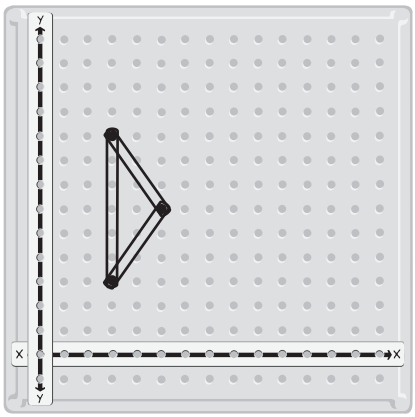
Name _____

Challenge! How do you use the line of reflection to find the location of the reflected figure?

Name _____

Use an XY Coordinate Pegboard to model the triangle. Write the coordinates of the vertices. Translate the original triangle and write the coordinates of the vertices of each new triangle.

1.



vertices of triangle

_____

Slide 2 units right

_____

Slide 4 units right, 1 unit down

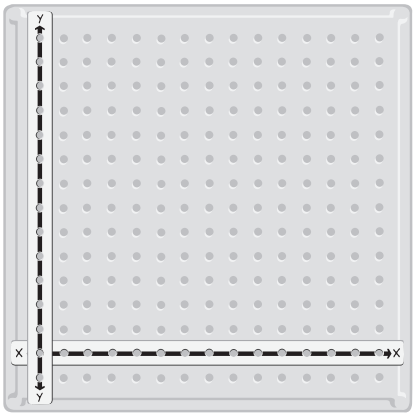
_____

Slide 5 units right, 3 units up

_____

Using an XY Coordinate Pegboard, model the rectangle with the given vertices. Translate the original rectangle. Sketch the translation and write the coordinates of the new rectangle.

2. (2, 1), (2, 6), (5, 1), (5, 6)



Slide 3 units right

_____

Slide 1 unit down

_____

Slide 2 units right, 4 units up

_____

Name the coordinates of each vertices after the translation described.

3. translate the triangle 4 units right

(2, 5)_____

(3, 1)_____

(5, 5)_____

4. translate the triangle 2 units left and 2 units up

(4, 0)_____

(6, 7)_____

(3, 5)_____

5. translate the triangle 6 units right and 3 units down

(7, 9)_____

(6, 10)_____

(9, 5)_____

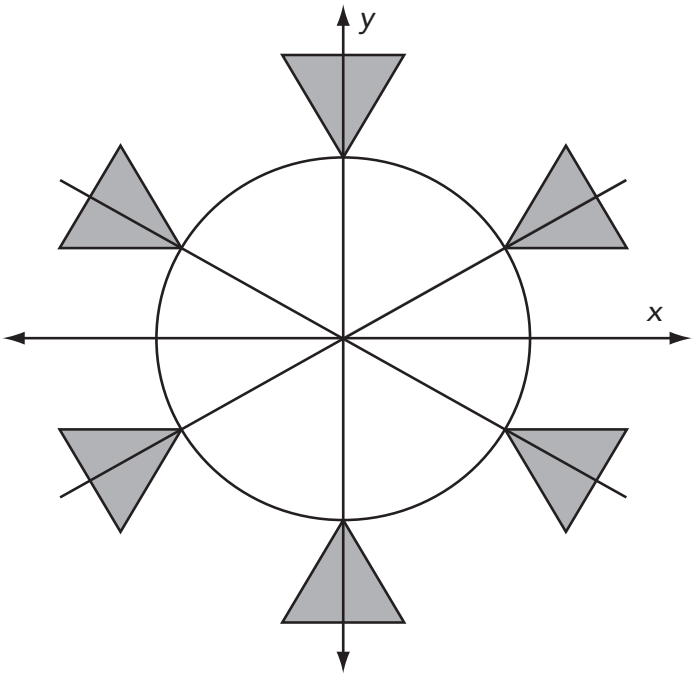
Name _____

Challenge! Describe how to find the new location of a point that is translated when you do not have a coordinate grid in front of you.

Name _____

Use Pattern Blocks and grid paper to model the rotations shown below. The triangle is rotated about the origin. Fill in the blanks. Find the degrees of rotation.

1.



One complete rotation is _____.

The triangle is rotated _____ times.

The angle of rotation is _____.

Using Pattern Blocks and grid paper, model the rotation of a square 4 times about the origin. Sketch the model.

2.

What is the angle of rotation when a square is rotated about the origin 4 times? _____

Identify the angle of rotation about the origin for each number of rotations.

3. 5 rotations

_____

4. 12 rotations

_____

5. 3 rotations

_____

6. 10 rotations

_____

7. 9 rotations

_____

8. 15 rotations

_____

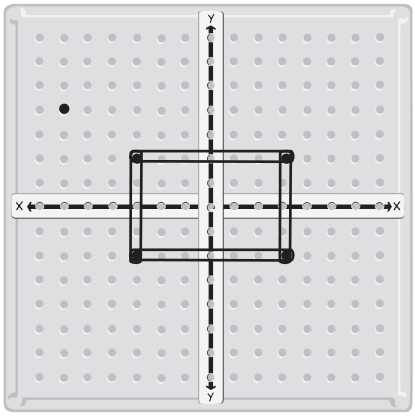
Name _____

Challenge! Why do you use 360° as the dividend when you are finding an angle of rotation?

Name _____

Use an XY Coordinate Pegboard to model each rectangle. One vertex of a dilation is shown. Find the other vertices. Write the coordinates of the vertices after the dilation. What is the scale factor?

1.



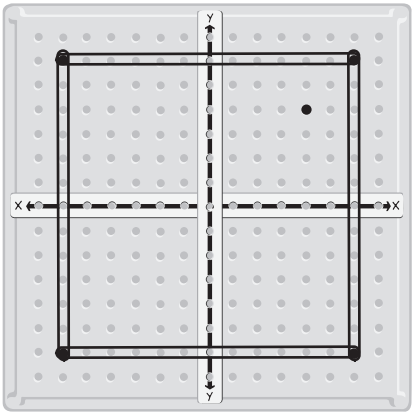
vertices of dilated image

_____

scale factor

_____

2.



vertices of dilated image

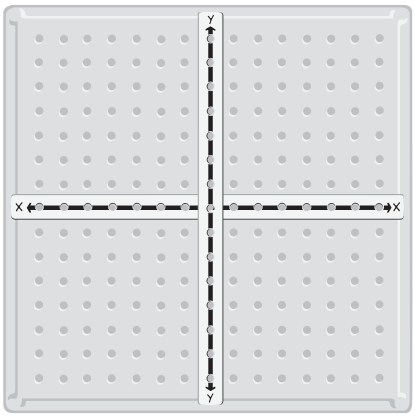
_____

scale factor

_____

Using an XY Coordinate Pegboard, model a rectangle. Draw the figure and the dilated images on the grid below. Name the coordinates of the original rectangle and the dilated rectangle.

3. scale factor: 3



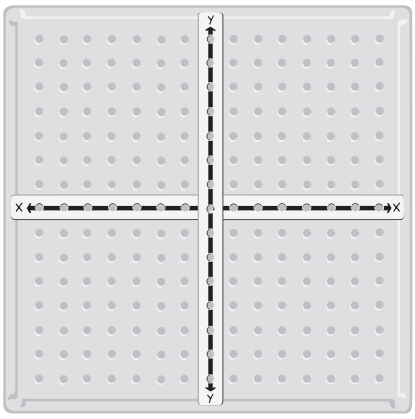
vertices of rectangle

_____

vertices of dilated rectangle

_____

4. scale factor: $\frac{1}{2}$



vertices of rectangle

_____

vertices of dilated rectangle

_____

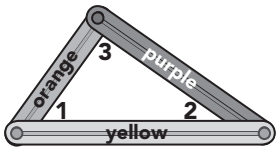
Name _____

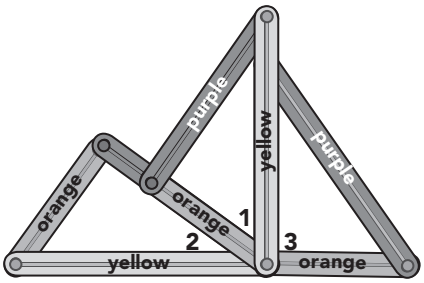
Challenge! Explain how you know from the scale factor if the dilated figure will be an enlargement or a reduction of the original figure.

Name _____

Use AngLegs to model the triangle three times. Assemble the triangles as shown. Find the sum of the angles of the triangle. Explain your answer.

1.





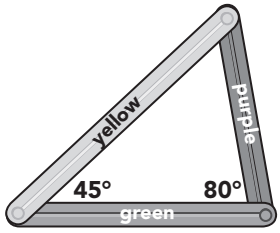
$m\angle 1 + m\angle 2 + m\angle 3 =$ _____

_____

_____

Using AngLegs, model three triangles that match the given triangle. Assemble the triangles to form a straight line. Sketch the model. Find the measure of the unknown angle.

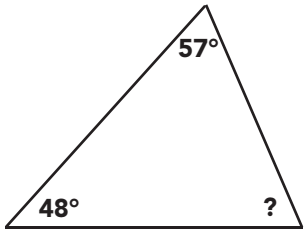
2.



missing angle = _____

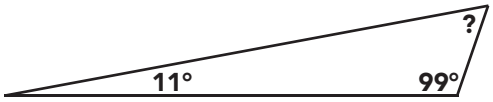
Find the measure of each unknown angle.

3.



_____

4.



_____

Two angle measures of a triangle are given. Find the third.

5. 58°, 39° _____

6. 33°, 35° _____

7. 106°, 22° _____

8. 90°, 45° _____

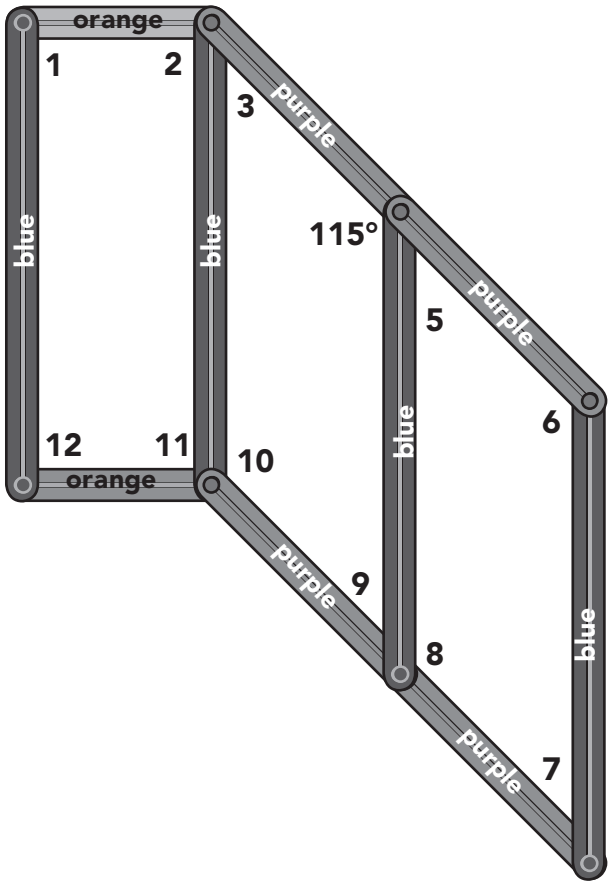
Name _____

Challenge! Explain how you can model an isosceles triangle using AngLegs. What is the measure of the base angles of an isosceles triangle that has a third angle with a measure of 50°? Draw a picture to help. Show your work.

Name _____

Use AngLegs to build the model shown. Use the AngLegs protractor to measure each angle. Which angles are congruent?

1.



m∠1 = _____

m∠2 = _____

m∠3 = _____

m∠4 = 115°

m∠5 = _____

m∠6 = _____

m∠7 = _____

m∠8 = _____

m∠9 = _____

m∠10 = _____

m∠11 = _____

m∠12 = _____

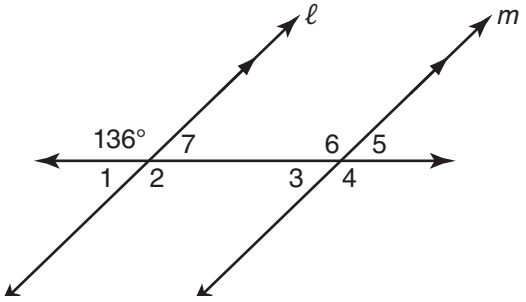
Angles congruent to ∠1: _____

Angles congruent to ∠3: _____

Angles congruent to ∠4: _____

Use the measure given to find the measures of the other angles. $\ell \parallel m$.

2.



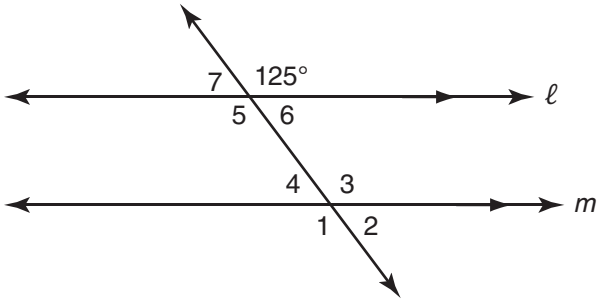
m∠1 = _____ m∠2 = _____

m∠3 = _____ m∠4 = _____

m∠5 = _____ m∠6 = _____

m∠7 = _____

3.



m∠1 = _____ m∠2 = _____

m∠3 = _____ m∠4 = _____

m∠5 = _____ m∠6 = _____

m∠7 = _____

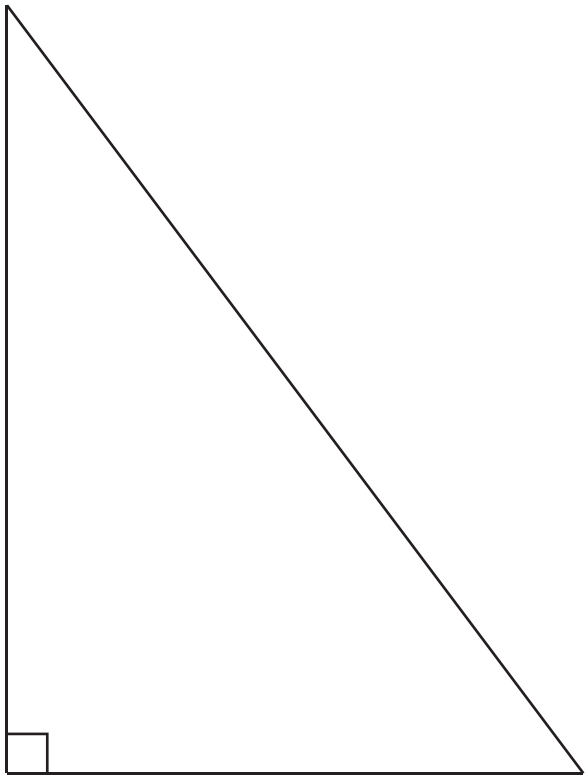
Name _____

Challenge! When given two parallel lines cut by a transversal, if you are given the measure of one angle, how do you find the measures of the other seven angles? Draw a diagram to help.

Name _____

Use Color Tiles to model a square the length of the hypotenuse of the triangle shown. Use those tiles to build squares on the legs of the triangle. Write the equation for the Pythagorean theorem.

1.



_____ + _____ = _____

_____ + _____ = _____

Find another Pythagorean triple and illustrate that it satisfies the Pythagorean theorem. Sketch the model. Write the equation.

2.

Show the equation you can use to determine if each set of numbers can be the lengths of sides of a right triangle. Write yes or no.

3. 5, 12, 13 _____

4. 4, 7, 8 _____

5. 12, 16, 20 _____

Name _____

Challenge! Explain how to test three numbers to see if they could be the lengths of the sides of a right triangle. What number will represent the hypotenuse? Explain.