

Name \_\_\_\_\_

Show all work! Per. \_\_\_\_\_

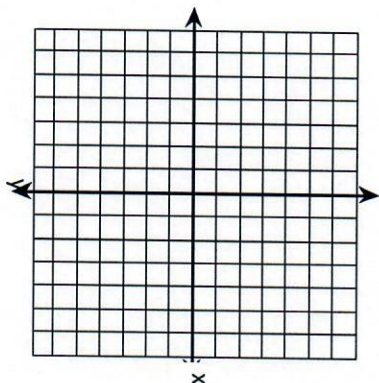
1. For each of the following figures, express the area as both a sum and a product.

<p>a)</p> <p>Area as a product = _____ = Area as a sum _____</p>	<p>b)</p> <p>Area as a product = _____ = Area as a sum _____</p>
--	--

2. Plot the points A(4, 4), B(1, 4), and C(2, 1).

a) Reflect  $\triangle ABC$  across the y-axis and draw  $\triangle A'B'C'$ . What are the new vertices?

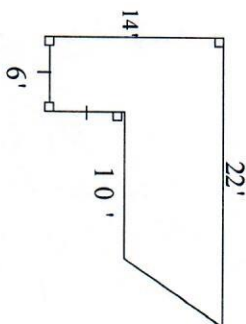
b) Rotate  $\triangle ABC$   $90^\circ$  around the origin counter-clockwise and make  $\triangle A''B''C''$ . What are the new vertices?



- a.  $A'$  \_\_\_\_\_  
 $B'$  \_\_\_\_\_  
 $C'$  \_\_\_\_\_
- b.  $A''$  \_\_\_\_\_  
 $B''$  \_\_\_\_\_  
 $C''$  \_\_\_\_\_
- c) Translate  $\triangle ABC$  and draw  $\triangle A'''B'''C'''$  so that the coordinates of  $C'''$  are (-4, -3). What are the other two new vertices?

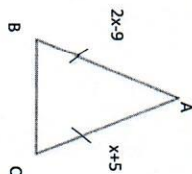
- c.  $A'''$  \_\_\_\_\_  
 $B'''$  \_\_\_\_\_  
 $C'''$  \_\_\_\_\_

3. Find the area of this figure. Show your dissections and any sub problems you use.



4.

a. Write an equation and solve for x.



x = \_\_\_\_\_

b. What are the lengths of the sides of the triangle?

AB: \_\_\_\_\_ CA: \_\_\_\_\_

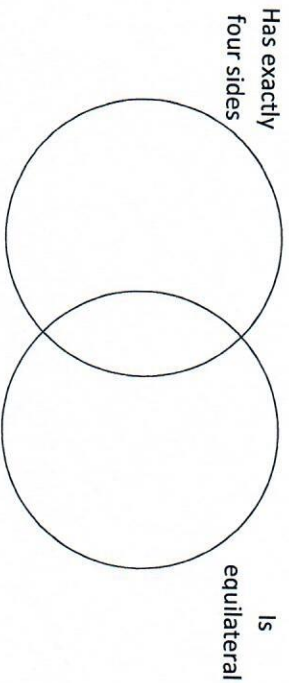
c. What kind of triangle is this? Explain.

This is a(n) \_\_\_\_\_ because \_\_\_\_\_

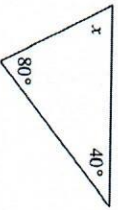
Area = \_\_\_\_\_

Check Answers: (They are not in order) (4,-4), (1,-4), (2,-1), (-4,4), (-4,1), (-1,2), (-2,0), (-5,0), (x-4)(2x+5) =  $2x^2 - 3x - 20$ ,  $2x(3x+9) = 6x^2 + 18x$ , 14, 19, 19, 188

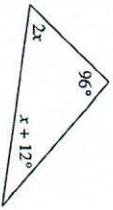
5. Tiffany has the following shapes: Rhombus, Rectangle, Square, Kite, Regular Pentagon, Scalene Triangle and a Trapezoid. Complete the Venn Diagram below by drawing each shape. Label the name of each shape.



6. Use the Triangle Angle Sum Theorem to write an equation and solve for  $x$  in each diagram below. Show all work.

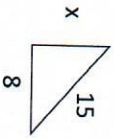


a)



b)

7. Find the length of the side marked  $x$ .



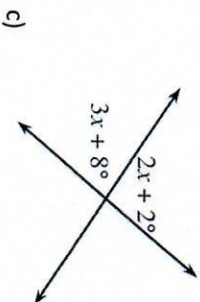
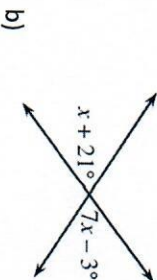
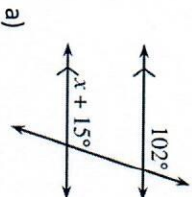
8. A puppy weighs 2 lbs and is gaining 40% of its weight every month. Determine the weight of the puppy in 6 months.
- a) What is the multiplier?
- b) What is the initial value?
- c) What is the general form of an exponential equation?
- $y = \underline{\hspace{2cm}}$
- d) Write and solve an exponential equation for this problem.

9. Will the lengths form a triangle?

- a) 4, 4, 8
- b) 6, 7, 8
- c) 1, 5, 3

**Check Answers: (They are not in order)**  
 24, 60, 1.4, 2, 12.69, 15.06, 4, 87,  
 34, 6.4, 5/4,  $y = -\frac{4}{5}x - 1$ ,  $y = a \cdot b^x$ , Yes,  
 No, No

10. Identify the geometric angle relationship(s) in each diagram. Use what you know about those relationships to write an equation and solve for  $x$ .



- 11.

Graph the points A(-1, 6) and B(3, 1) and draw the segment between them.

- a) Draw the slope triangle and find the slope.
- b) Find the length of AB.
- c) Write an equation of a line that is perpendicular to this segment and passes through the point (0, -1).

