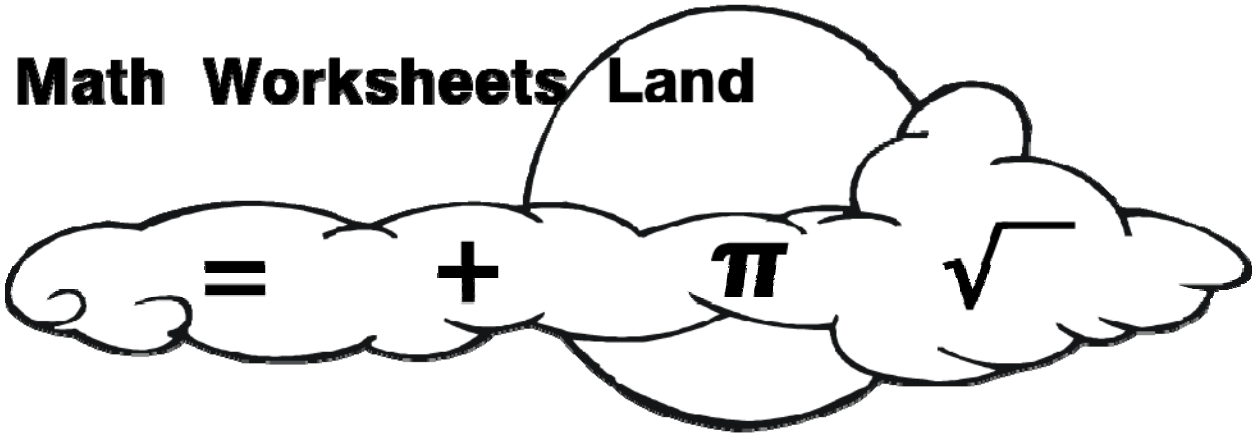
High School Geometry Test Sampler

Math Common Core Sampler Test



Our High School Geometry sampler covers the twenty most common questions that we see targeted for this level. For complete tests and break downs of each section, please check out web site listed below.

High School Geometry Common Core Math Tests:

http://www.mathworksheetsland.com/tests/hsgeometry.html

For Full Geometry Worksheets, Quizzes, and Homework Samples:

http://www.mathworksheetsland.com/geometry/

Name _____ Date _____

High School Geometry Test Sampler Outline

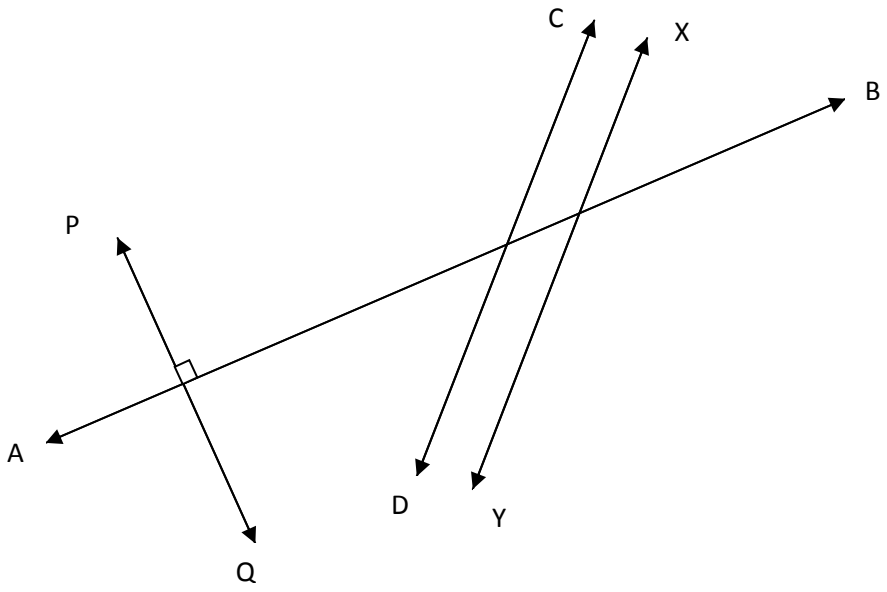
1. Basic Geometry Definitions
2. Geometric Transformations within a Plane
3. Rotations, Reflections, and Translations of Geometric Shapes
4. Geometric Proofs on Lines and Angles
5. Congruent Triangles: SSS and SAS Theorems
6. Trigonometric Ratios and the Pythagorean Theorem
7. Cos and Sin Trigonometric Ratios
8. Area of a Triangle Using Trigonometry
9. Similarity of Circles
10. Volume of Cylinders and Triangular Prisms
11. Truth Values of Compound Sentences
12. Equations of Hyperbolas
13. Finding Midpoints of Line Segments
14. Using Density in Real-life Situations
15. Conjunctions, Disjunctions, and Biconditionals
16. Finding the Equation of Circles
17. Area and Perimeter in the Coordinate Plane
18. Negation and Conjunction In Logic Statements
19. Constructing and Using Tangent Lines
20. Find the Missing Angle Using Trigonometry

Name _____ Date _____

1.

a. Name the parallel lines._____

b. Name two right angles._____



Name _____ Date _____

2. Translate the triangle in Figure A below 3 units left and 2 units up. Graph the resulting triangle.

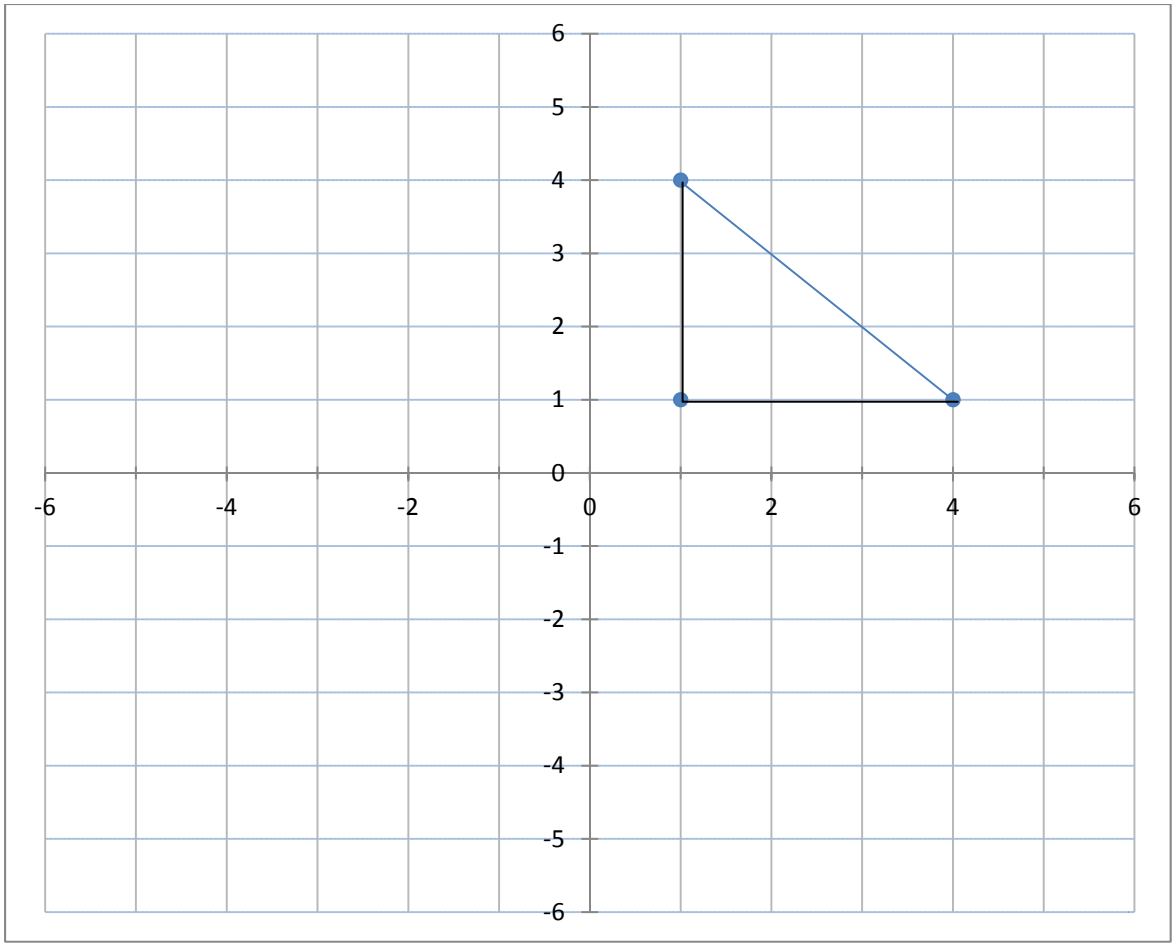
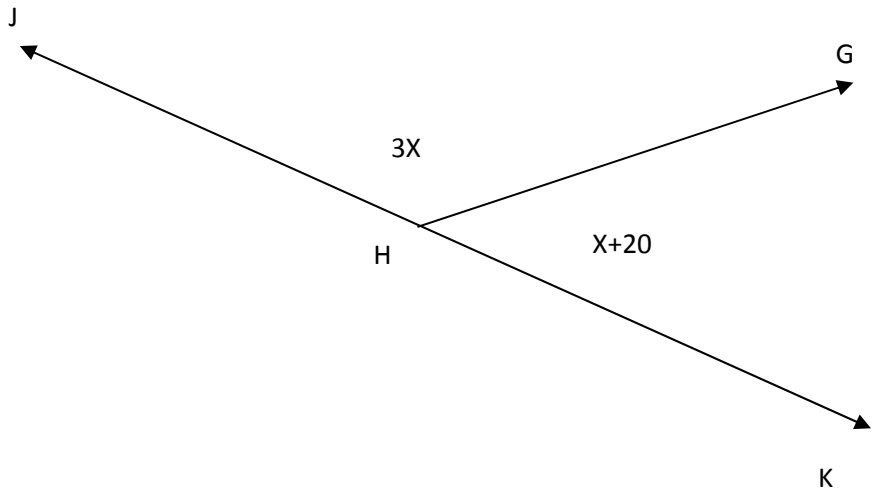


Figure A

3. Using the triangle in Figure A above, reflect it symmetrically across the origin. Graph this result on the grid shown.

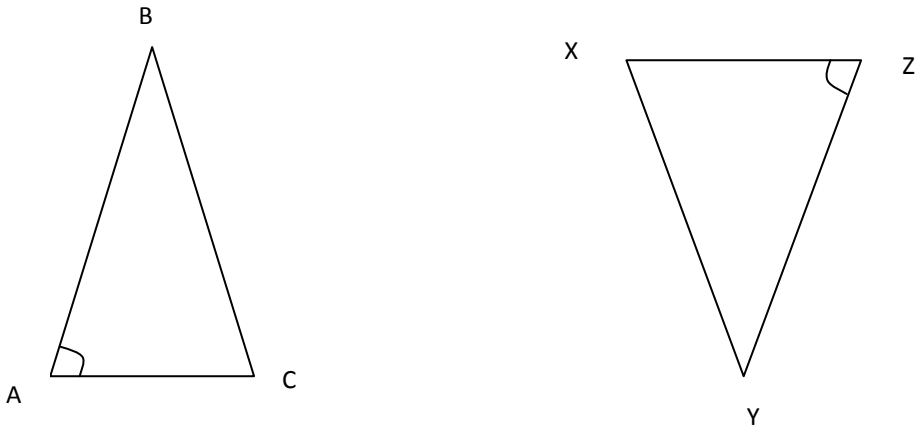
Name _____ Date _____

4. Find the value of the angle JHG in Figure B below.



5. Prove the triangles below are congruent given the following:

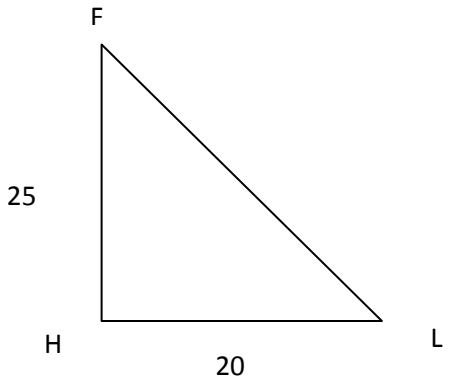
$\angle$BAC $\simeq \angle$ XZY, AB $\simeq$ YZ, AC $\simeq$ XZ



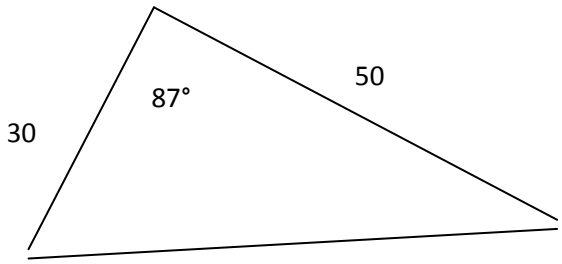
Name _____ Date _____

6. To get on the roof of a building, Carlos leaned his ladder against the rooftop at a 65-degree angle. If the roof is 100' above the ground, how far from the building was the ladder placed?

7. What is the sine of ∠ HLF?

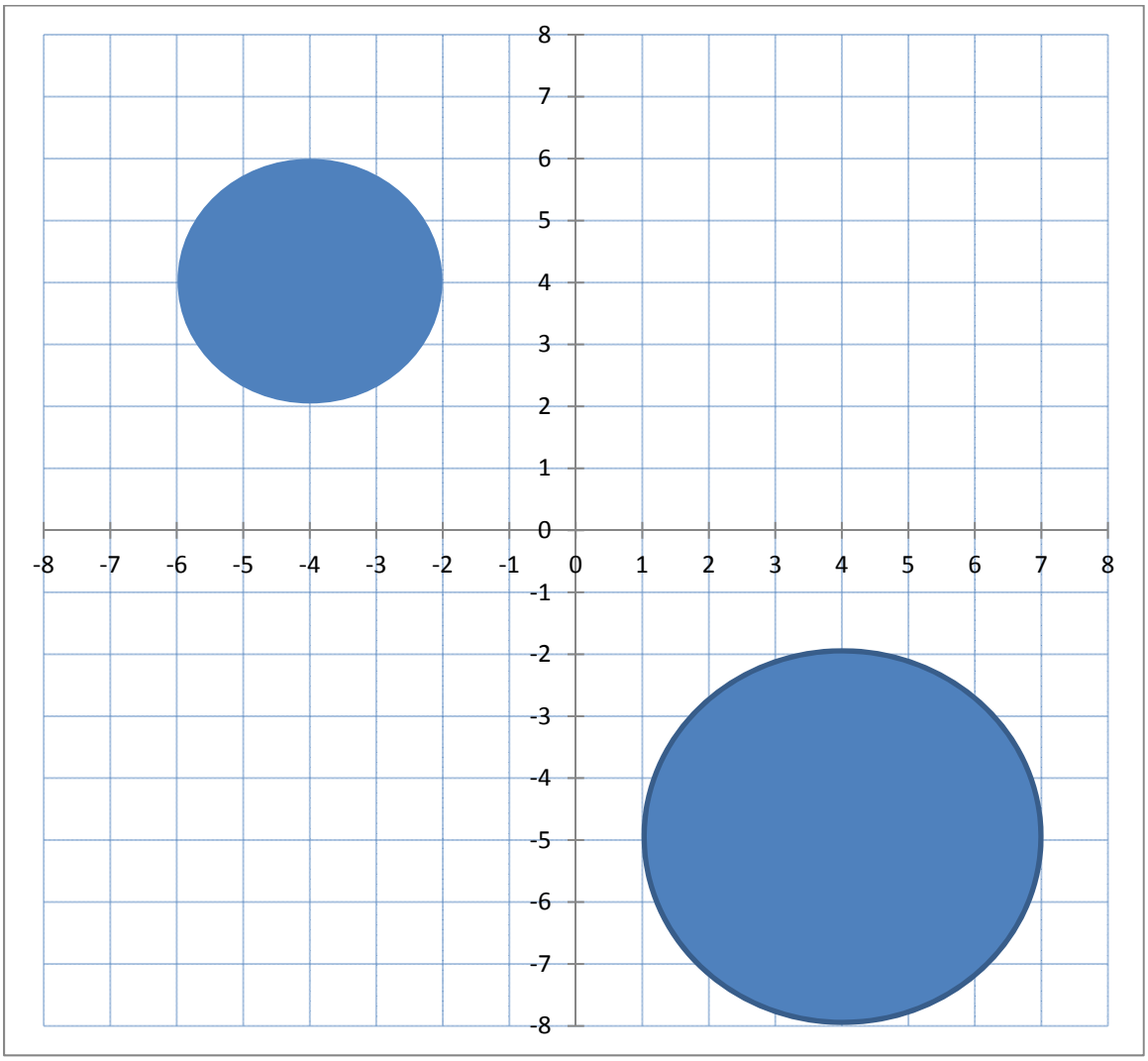


8. What is the area of the triangle below?

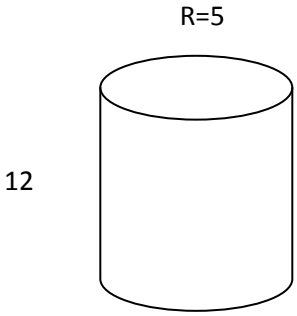


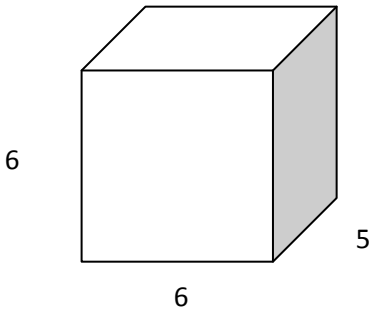
Name _____ Date _____

9. Find the translation rule and the scale factor dilation.



10. Find the volume of the cylinder below.





Name _____ Date _____

11. Determine the truth value of the following statement:

2645 – 2780 = 135 and 19 is a prime number.

12. Find the equation of the hyperbola with center (13,15), vertex (2,15) and focus (7,15).

13. A (-3,4) and B (-2,2) are the endpoints of a line segment. What is the midpoint M of that line segment?

14. A concert promoter must limit the number of people attending a concert to 0.02 people per square foot. If the venue measured 5 hundred thousand square feet, how many people can attend the concert?

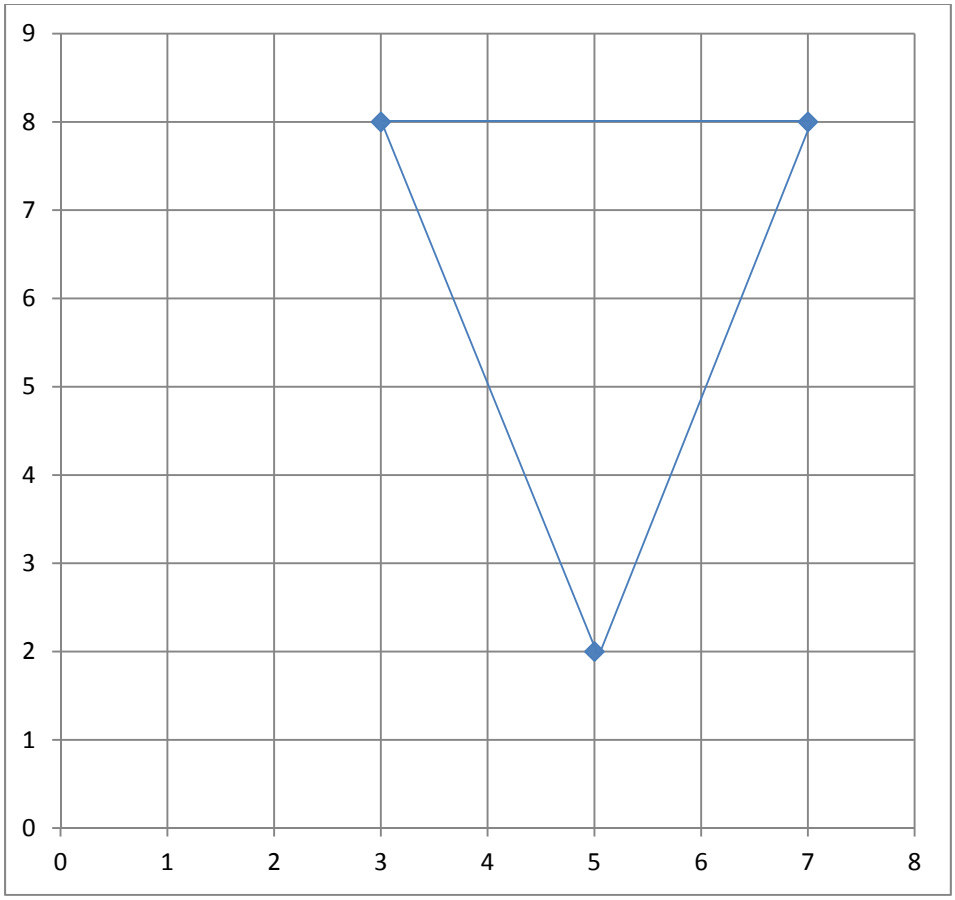
15. What is the truth value of the statement?

5 is an odd number or 4 is a prime number.

Name _____ Date _____

16. Find the equation of a circle whose diameter is located at the endpoints of the line segment at points N (-3,6) and L(-7,6).

17. Find the area of the triangle below.

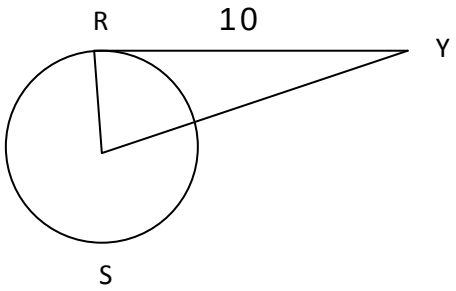


18. What is the truth value of the negation of the following sentence?

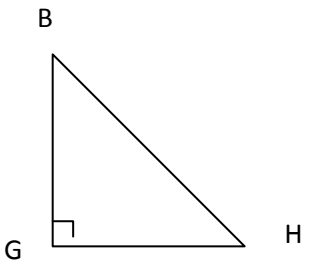
The sum of the angles in a parallelogram is 360 °.

Name _____ Date _____

19. RY is tangent to the circle whose center is at S. The diameter of the circle is 14. What is SY? Assume ∠ YRS is 90°.



20. BG = 7.5, GH =10. What is ∠ GHB?



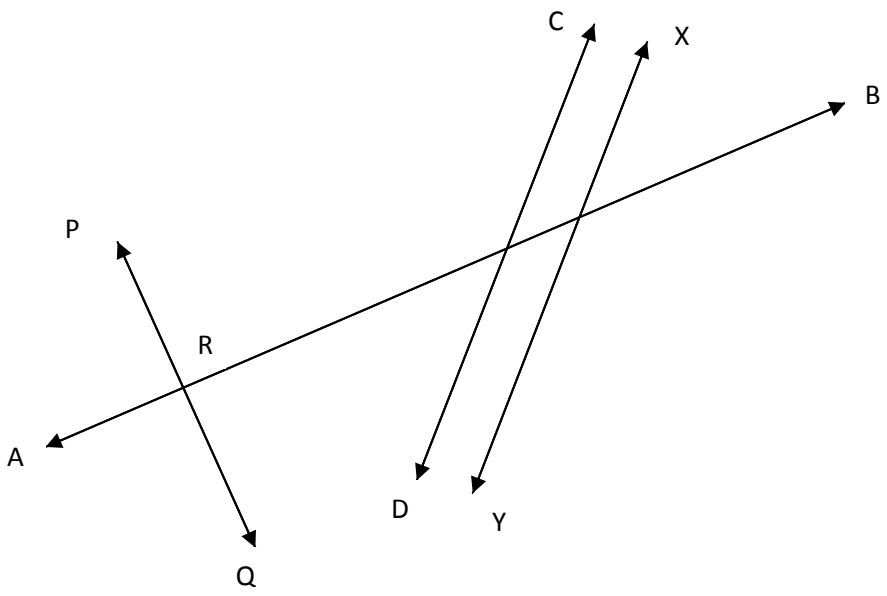
Name _____ Date _____

ANSWER KEY

1.

a. Name the parallel lines. Line DC and Line YX

b. Name two right angles. ∠ PRA and ∠ PRB



Name _____ Date _____

2. Translate the triangle in Figure A below 3 units left and 2 units up. Graph the resulting triangle.

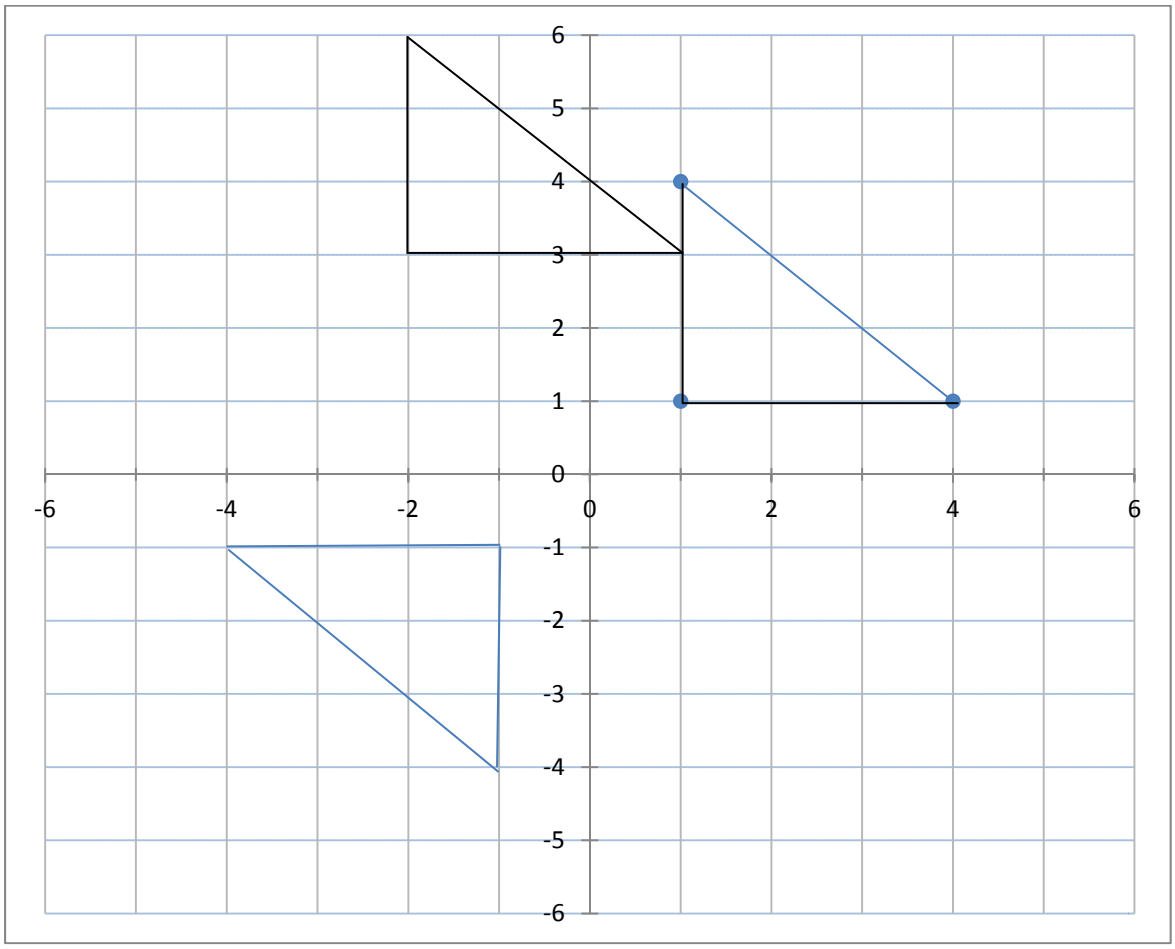


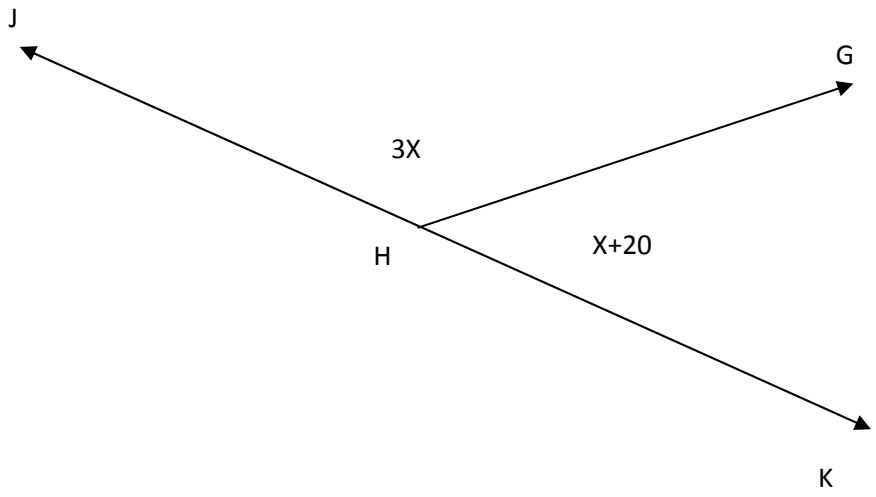
Figure A

3. Using the triangle in Figure A above reflect it symmetrically across the origin. Graph this result on the grid shown.

Name _____ Date _____

4. Find the value of the angle JHG in Figure B below.

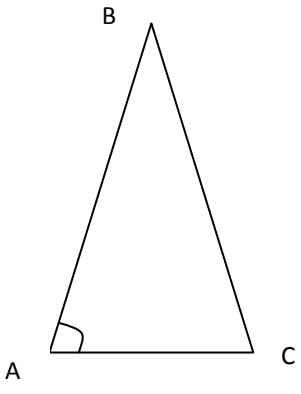
3X+X+20=180, X=40 ∠ JHG =120°

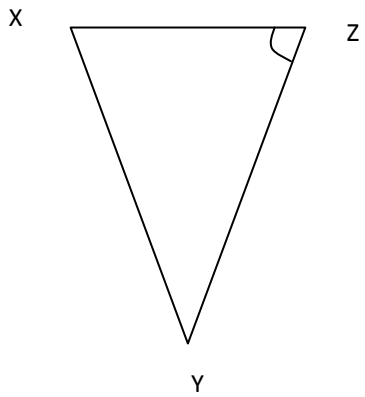


5. Prove the triangles below are congruent given the following:

∠BAC ≃∠XZY, AB ≃ YZ, AC ≃ XZ

SAS theorem states two triangles with two sides that are congruent and the included angle is also congruent are congruent triangles. Proofs will vary.

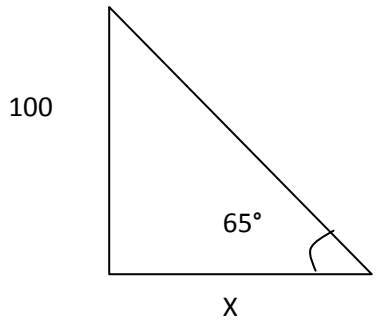




Name _____ Date _____

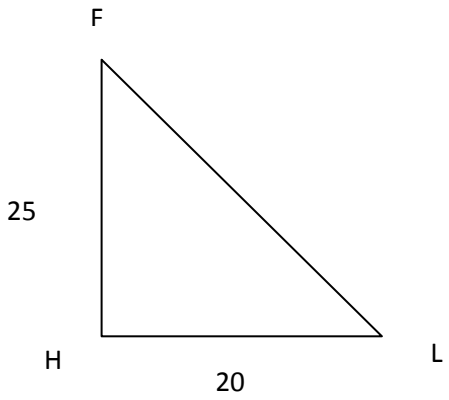
6. To get on the roof of a building Carlos leaned his ladder against the rooftop at a 65 degree angle. If the roof is 100' above the ground how far from the building was the ladder placed?

X = $\frac{100}{\tan 65}$ = 46.6 feet

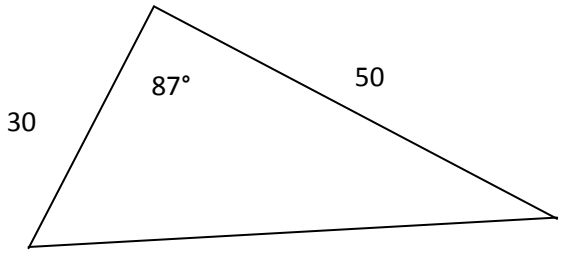


7. What is the sine of ∠ HLF? After solving for the hypotenuse using the Pythagorean Theorem:

Sin $\frac{25}{32.02}$ = 0.0136



8. What is the area of the triangle below?

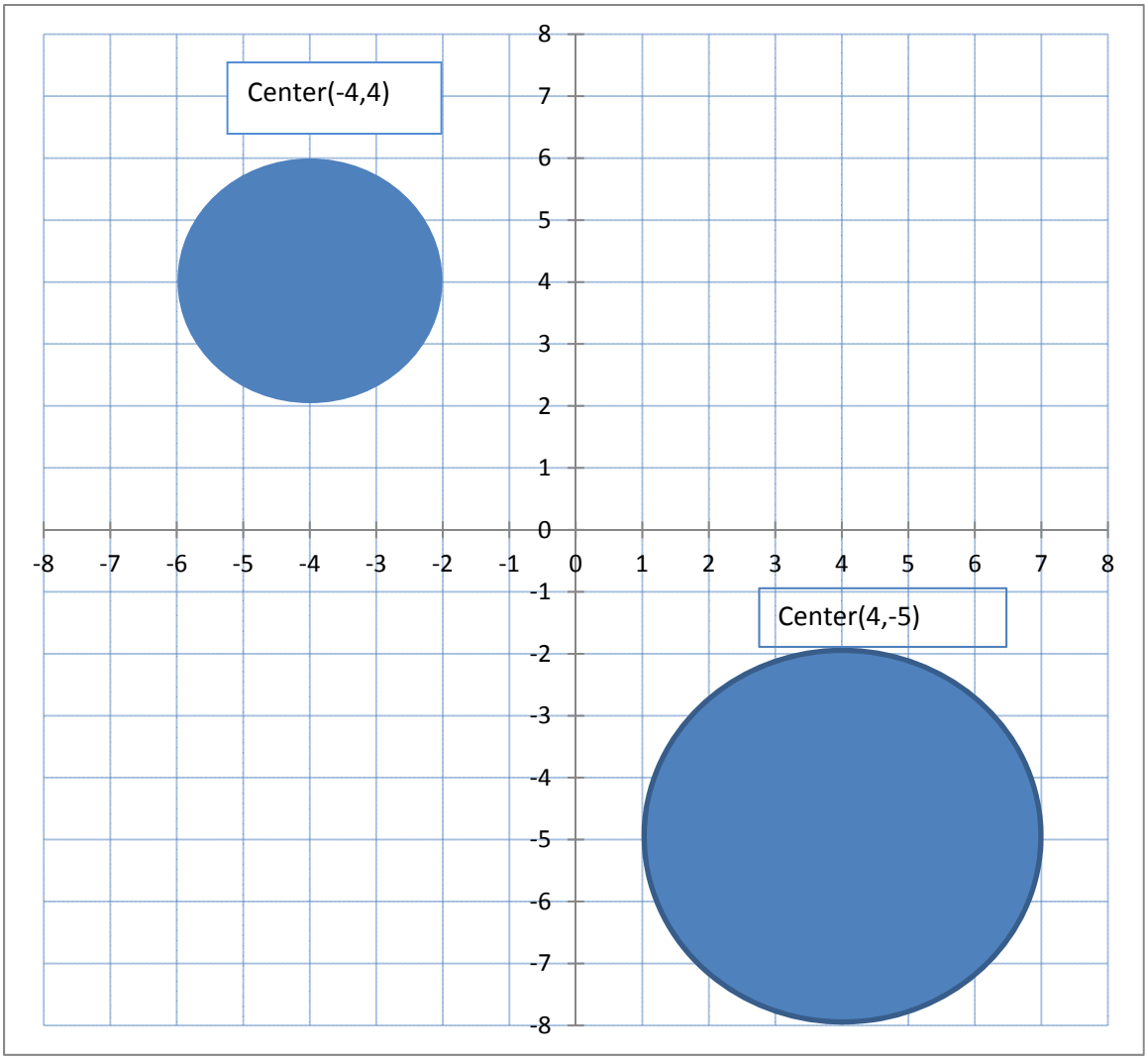


When two sides and the included angle of a triangle are known the
Area = ½(30)(50)Sin(87) = 748.97

Name _____ Date _____

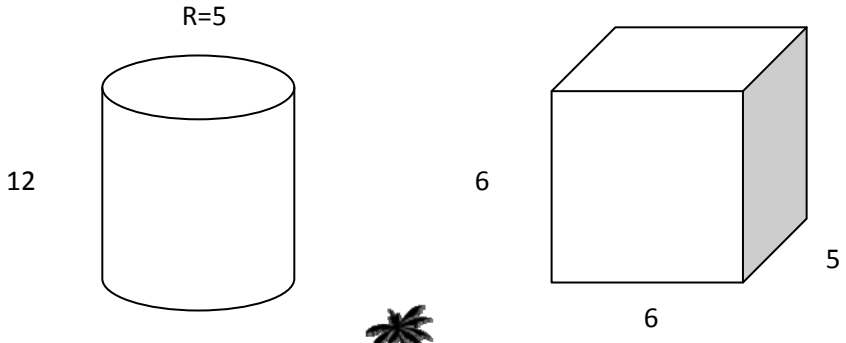
9. Find the translation rule and the scale factor dilation.

9 units up, 8 units left is the translation. The largest circle is 1 ½ times the smaller circle, or the smaller circle is 2/3 the larger circle.



10. Find the volume of the cylinder below. The cylinder is on the left.

Area = Pi r^2h = 3.14(5^2)(12) = 942



Name _____ Date _____

11. Determine the truth value of the following statement: False

2645-2780= -135

2645 – 2780 = 135 and 19 is a prime number.

12. Find the equation of the hyperbola with center (13,15), vertex (2,15) and focus (7,15).

$$\frac{(x-13)^2}{169} - \frac{(y-15)^2}{56}$$

13. A (-3,4) and B (-2,2) are the endpoints of a line segment. What is the midpoint M of that line segment?

Divide the distance between the coordinates by 2: (1/2, 1)

14. A concert promoter must limit the number of people attending a concert to 0.02 people per square foot. If the venue measured 5 hundred thousand square feet how many people can attend the concert?

0.02(500000) = 10,000 people

15. What is the truth value of the statement? True

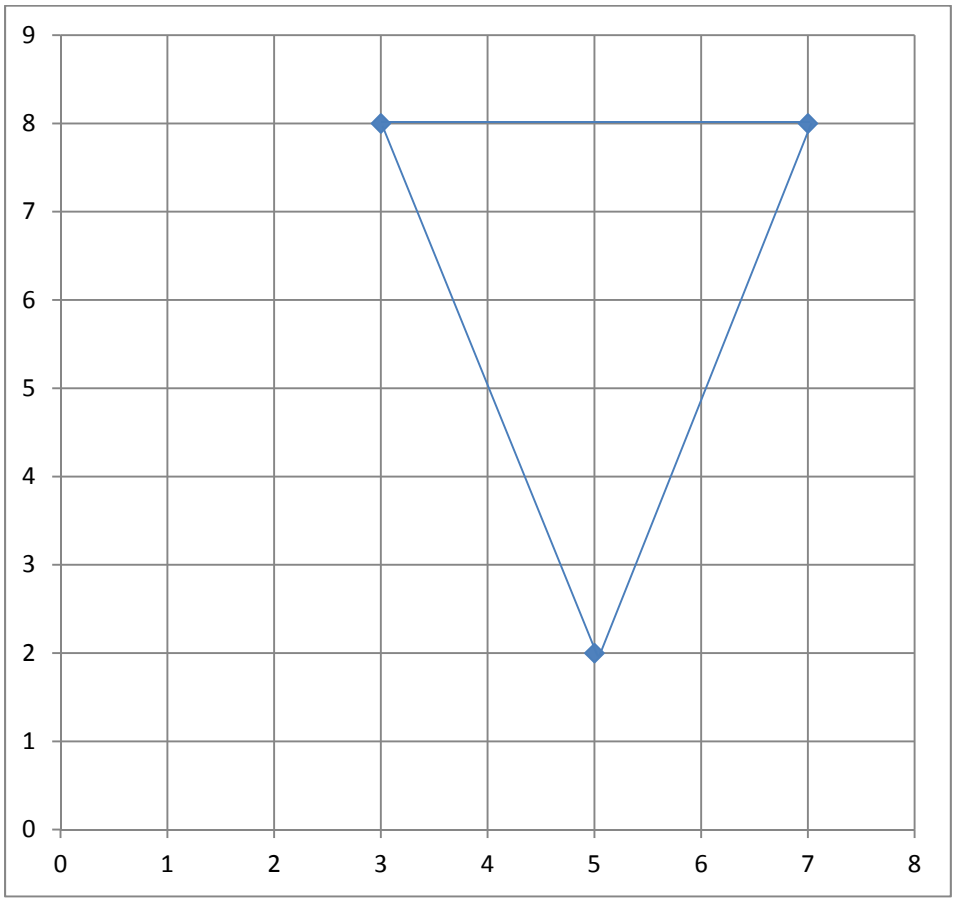
5 is an odd number or 4 is a prime number.

16. Find the equation of a circle whose diameter is located at the endpoints of the line segment at points N (-3,6) and L(-7,6). Find the center of the circle: C(-5,6) then divide the diameter by 2 to get the radius.

$(x+5)^2 + (y-6)^2 = 4$

Name _____ Date _____

17. Find the area of the triangle below.



Area = 1/2bh = ½(4)(6) = 12

18. What is the truth value of the negation of the following sentence? False

The sum of the angles in a parallelogram is 360 °.

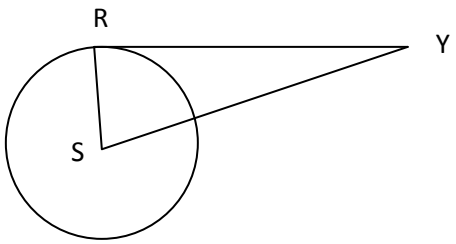
Name _____ Date _____

19. RY is tangent to the circle whose center is at S. RY = 10 and RS = 7

What is SY?

$7^2 + 10^2 = SY^2$

$49 + 100 = SY^2 = \sqrt{149} = 12.21$



20. BG = 7.5; GH =10 What is cosine of ∠ GHB?

After finding the length of the hypotenuse to be 12.5 the cosine is:

Cos(10/12.5) = 0.697