Pre-calculus: Quiz Review of Trig. Laws #1 **Name** _____

State the Law of Sines:

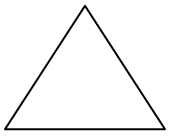
State **both** Laws of Cosines:

What is the trig. Formula (SAS) for the area of a triangle?

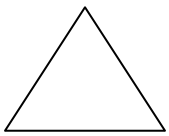
What is Heron's formula (SSS) for the area of a triangle?

For the following problems, draw and label a triangle and solve for the missing parts. Round side lengths to <u>four numbers after the decimal point and angles to the nearest hundredth.</u>

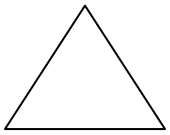
1. m∠C = 76°, c =3, b = 4



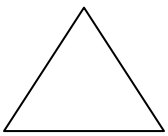
2. m∠A = 120°, b = 14, c = 16



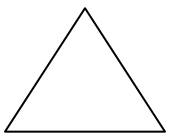
3. m∠A = 22°, a= 2, b = 4



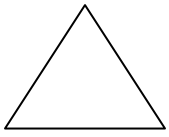
4. a = 6, b = 10, c= 7



5. m∠C = 50°, a= 3, b = 8



6. m∠B = 30°, c =6, b = 3



Find the area of the following triangles.

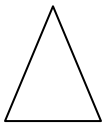
7. a = 10, b = 20, m∠C = 110°

8. a = 8, b = 7, c= 13

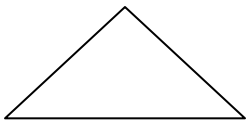
Draw and label a picture and then solve the following story problems.

9. Points A and B are on opposite sides of a lunar crater. Point C is 50 m from point A. The measure of ∠BAC is 112° and the measure of ∠ACB is 42°. What is the width of the crater?

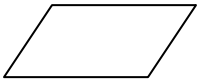
10. An isosceles triangle has a base of 22 cm and a vertex angle of 36°. Find the perimeter of the triangle.



11. A triangular lot has sides 120 ft, 150 ft and 100 ft long. Find the smallest angle of the lot.



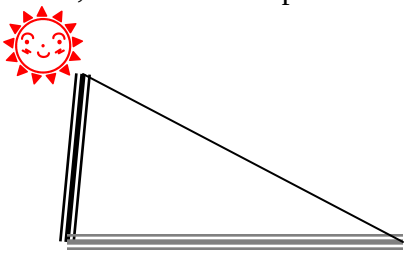
12. A parallelogram has a 70° angle and sides 6 cm and 10 cm long. How long is each diagonal?



First Diagonal

Second Diagonal

13. A pole is standing at an 83° angle and casts a shadow that is 47 ft. long. If the angle of elevation of the sun is 51°, how tall is the pole?



14. An island is near two coastal towns, A and B. Town B is 15 miles south of town A. The island's compass reading from A is S57.1°E and its compass reading from B is N12.6°E. How far is the island from the closer town? A labeled diagram must be included with trig. work shown!

15. Beth flew her plane 900 km north, turned on a course 15°, and flew 1150 km. How far is Beth from her starting point?

A labeled diagram must be included with trig. work shown!