Name_____

TRIGONOMETRY JOURNAL
SOLVING OBLIQUE TRIANGLES & VECTORS

1. a) The Laws of Sines and Cosines can be used when working with _____ and _____ triangles.

    b) Law of Sines equations should be set up with the unknown variable _____ .

2. a) The ambiguous case of the Law of Sines occurs when the given information forms _____ .

    b) The word "ambiguous" means _____ and the ambiguous case of the Law of Sines can form _____triangles.

    c) You know that no triangle exists when _____

    _____ .

    d) Steps for testing for 2 possible triangles:

    1) _____

    2) _____

    3) _____

3. a) When solving for the missing parts of any triangle, the Law of _____ only needs to be used _____ time, while the Law of _____ may need to be used multiple times.

    b) When solving a triangle that required the use of the Law of Cosines first, you must next find _____ _____ when you switch to using the Law of Sines.

4. a) The two parts of a vector are _____ , which is the _____ of the vector and _____ which is expressed as an _____ .

5. a) When adding two or more vectors together, the vectors are placed _____ .

    b) The sum of two vectors is called the _____ .

    c) Draw a diagram illustrating parts a & b above. Label each vector.

6. The component form of a vector is written as _____ and gives the _____

    _____ .

7. a) Vectors which meet at a right angle are called _____ vectors.

    b) Parallel vectors occur when two vectors have _____ .

    c) Given Vector 1 $\langle x_1, y_1 \rangle$ and Vector 2 $\langle x_2, y_2 \rangle$, the dot product ic calculated by _____ .

    d) If the dot product of two vectors equals 0, then the vectors are _____ .

8. a) Two vectors in a state of equilibrium must form _____ .

    b) Three or more vectors in a state of equilibrium form _____ .

9. a) When two forces act on an object, the resultant force is the vector which goes from the _____ *(start/end)* point to the _____ *(start/end)* point.

    b) When a 3rd force is added to two existing forces to create equilibrium, the equilibrium force is the vector that goes from the _____ *(start/end)* point to the _____ *(start/end)* point..

10. Parametric equations represent the _____ and _____ motion of an object in

terms of _____.

11. List the following formulas and operations.
   a) Write the Law of Sines and *list the geometry theorems* which determine when it can be used.

   b) Write all three versions of the Law of Cosines and *list the geometry theorems* which determine when it can be used.

   c) Methods for finding the magnitude and direction of a vector given its horizontal and vertical components.

   d) Formulas for finding the horizontal and vertical components of a vector given its magnitude and direction.

   e) Draw and label the vector diagram for a problem involving pushing or pulling an object up a ramp.

   f) Draw and label the coordinate system for navigation.

   g) Draw and label the vector diagram that results from a problem involving flying an airplane in windy conditions. Label with the correct terminology for both speed and direction.

   h) Parametric formulas for horizontal and vertical components of a projectile