

**TRIGONOMETRY JOURNAL**  
**SOLVING OBLIQUE TRIANGLES & VECTORS**

1. a) Triangles which do not have a right angle are called \_\_\_\_\_ triangles and must be solved using the \_\_\_\_\_ or the \_\_\_\_\_.
- b) Right triangles can be solved with \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
2. a) The unknown variable in a Law of Sines equation should be located \_\_\_\_\_.
3. a) \_\_\_\_\_ is the term for a situation that is unclear or has more than one possibility.
- b) If the given information about a triangle forms \_\_\_\_\_, then the ambiguous case of the Law of Sines is present and \_\_\_\_\_ triangles are possible.
- c) When using the Law of Sines, no triangle exists when \_\_\_\_\_.
- d) Steps for testing for 2 possible triangles:
  - 1) \_\_\_\_\_
  - 2) \_\_\_\_\_
  - 3) \_\_\_\_\_
4. 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 the \_\_\_\_\_ when you switch to using the Law of Sines.
5. a) The two parts of a vector are \_\_\_\_\_ and \_\_\_\_\_.
- b) When drawing a vector diagram, \_\_\_\_\_ is represented as the \_\_\_\_\_ of the vector while \_\_\_\_\_ is given as an \_\_\_\_\_.
6. 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.
7. The component form of a vector is written as \_\_\_\_\_ and gives the \_\_\_\_\_.
8. a) Parallel vectors occur when two vectors have \_\_\_\_\_.
- b) Vectors which meet at a right angle are called \_\_\_\_\_ vectors.
- c) Given Vector 1  $\langle x_1, y_1 \rangle$  and Vector 2  $\langle x_2, y_2 \rangle$ , the dot product is calculated by \_\_\_\_\_.
- d) Two vectors are orthogonal if \_\_\_\_\_.
9. a) A vector diagram is in a state of equilibrium if the last vector \_\_\_\_\_.
- b) Two vectors in a state of equilibrium form a \_\_\_\_\_ while three or more vectors in a state of equilibrium form \_\_\_\_\_.

10. a) When two forces act on an object, the equilibrium force is a third vector that goes from the \_\_\_\_\_  
(start/end) point to the \_\_\_\_\_ (start/end) point.
- b) When two or more forces act on an object, the resultant force is the vector that goes from the  
\_\_\_\_\_ (start/end) point to the \_\_\_\_\_ (start/end) point.
11. Parametric equations represent the \_\_\_\_\_ and \_\_\_\_\_ motion of an object in  
terms of \_\_\_\_\_.
12. 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