Vector addition post-test Name_____

Complete this after viewing the vector addition tutorial.

1. By definition, the Sine of an angle is:

   a) $\frac{\text{opposite side}}{\text{adjacent side}}$; b) $\frac{\text{adjacent side}}{\text{hypotenuse}}$; c) $\frac{\text{hypotenuse}}{\text{adjacent}}$; d) $\frac{\text{opposite side}}{\text{hypotenuse}}$

2. By definition, the Cosine of an angle is:

   a) $\frac{\text{opposite side}}{\text{adjacent side}}$; b) $\frac{\text{opposite side}}{\text{hypotenuse}}$; c) $\frac{\text{hypotenuse}}{\text{adjacent}}$; d) $\frac{\text{adjacent side}}{\text{hypotenuse}}$

3. By definition, the Tangent of an angle

   a) $\frac{\text{opposite side}}{\text{hypotenuse}}$; b) $\frac{\text{opposite side}}{\text{adjacent side}}$; c) $\frac{\text{adjacent side}}{\text{hypotenuse}}$; d) $\frac{\text{hypotenuse}}{\text{adjacent}}$

4. By definition, the Pythagorean Theorem is:
   a) $opp^2 = hyp^2 + adj^2$; b) $hyp^2 = opp^2 + adj^2$; c) $adj^2 = hyp^2 + opp^2$

5. Using a calculator, determine the North component of a 12 mile vector that points 60 degrees clockwise from North?

   a) 18.0 miles b) 6.00 miles c) 10.4 miles d) 20.8 miles

6. Using a calculator, determine the East component of a 12 mile vector that points 60 degrees clockwise from North?

   a) 18.0 miles b) 6.00 miles c) 10.4 miles d) 20.8 miles

7. Determine the sum of the north-south components of the following two vectors: 6 miles per hour at 80˚ plus 10 miles per hour at 140˚ :

   a) 8.7 $\frac{mi}{hr}$ south; b) 6.62 $\frac{mi}{hr}$ north c) 6.62 $\frac{mi}{hr}$ south d) 4.87 $\frac{mi}{hr}north$

8. Determine the sum of the east-west components of following two vectors: 6 miles per hour at 80˚ plus 10 miles per hour at 140˚ :

   a) 8.7 $\frac{mi}{hr}$ east; b) 12.3 $\frac{mi}{hr}$ east; c) 6.95 $\frac{mi}{hr}$ west ; d) 4.87 $\frac{mi}{hr}west$

9. The magnitude of the sum of 6 miles per hour at 80˚ plus 10 miles per hour at 140˚ is:

   a) 14.0 $\frac{mi}{hr}$; b) 15.1 $\frac{mi}{hr}$; c) 18 $\frac{mi}{hr}$; d) 16 $\frac{mi}{hr}$;

10. The direction of the sum 6 miles per hour at 80˚ plus 10 miles per hour at 140˚ is:
a) 118˚ clockwise from north; b) 118˚ counter clockwise from north; c) 54.8˚ clockwise from north; d) 54.8˚ counterclockwise from north