Vector Terms

Answer the following questions.

1. A vector is a graphical representation of a _____

2. Vectors have 2 quantities they are _____ and _____

3. In our text book vector concepts are _____ so they can be identified as vectors.

4. A drawing of a vector has 2 parts 1 is the arrow at the end which is called the _____. This part

   represents the _____ quantity. The second part is the line which is called the _____

   which represents the _____ quantity.

5. 2 vectors that have the same _____ but are 180° apart are called _____ vectors.

6. The sum of a set of vectors is called the _____.

7. The opposite of the answer to number six is the _____.

Vector Notes

Vector quantity - any quantity that has both magnitude (a size, an amount) and direction (that amount is directed somewhere). The direction can be a bearing direction, such as north, south, etc., or an angular measurement, such an angle with respect to a fixed coordinate system. Examples are displacement, velocity, acceleration, force, weight, momentum).

Scalar quantity - any quantity that has magnitude only. Examples are mass, length, time, electric charge, density, volume, temperature.

6 Parts of a Vector Quantity:

Conceptual	**Graphical**	**Mathematical**
1. magnitude	**1.** origin - point	**1.** polar
2. direction	**2.** terminal - arrowhead	**2.** rectangular

Methods of Vector Algebra:
Method 1. Graphical Method.
  1. Draw a Cartesian coordinate plane. Label x and y axes.
  2. Choose a convenient scale factor, such as 1 cm = 1 km. Do example with actual values.
  3. Draw the vectors with a ruler and protractor.
  4. Measure lengths of vectors using your scale factor. Ex. 1 cm = 1 km (left # = map/scale length, right # = REAL/scaled length)

  Discuss unit circle and angle measurements.
  Incorporate bearing directions (primary, secondary, tertiary) into unit circle discussion.

Vectors forms:
1. Polar Form - the vector can be written in terms of its magnitude and direction (bearing angle), such as a generic vector
       = [R, θ] = R @ θ   Example. **R** = [4, 40˚] or R = 4 @ 40˚.