

# Worksheet: Introduction to Vectors and Angles

Name KEY

## 1. Define scalar and vector quantities:

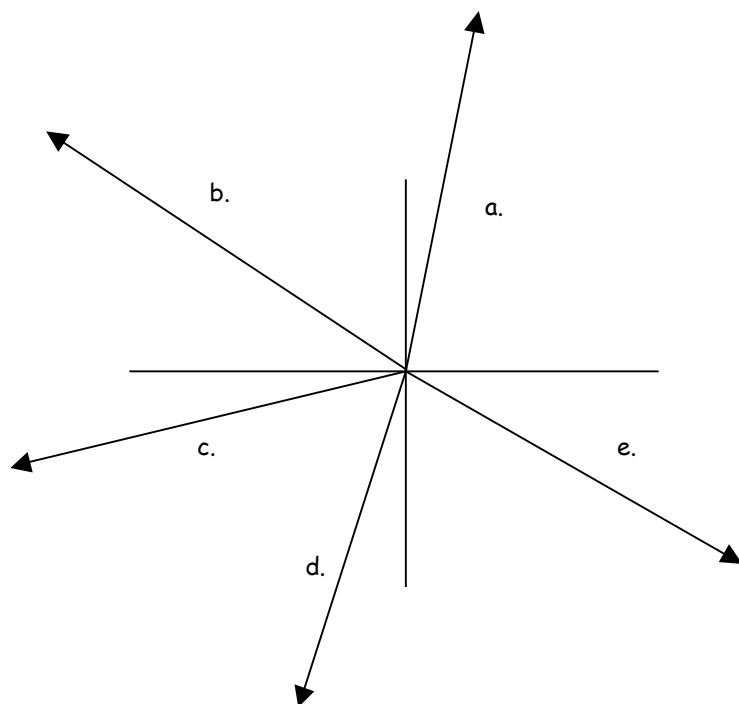
Scalar quantities have no direction and can be expressed with a number and unit (magnitude) only. Vectors require direction and must be expressed with magnitude and direction.

## 2. Which is a scalar and which is a vector?

A weight of 50 N	vector	instructions on a treasure map	vector
20 seconds of time	scalar	the force of friction	vector
a mass of 10 kg	scalar	your age	scalar
the length of your pencil	scalar	5 m/s, West	vector

## 3. In a vector, the length of the arrow represents the magnitude of that quantity.

## 4. If you walk 5 blocks to school, then 5 blocks back home because you forgot your homework, then 5 blocks back to school, your distance traveled is 15 blocks, but your displacement is 5 blocks. This is because (distance, displacement) is a quantity where direction does not matter (a scalar quantity, while (distance, displacement) is a quantity where direction does matter (a vector quantity).



## 5. Give the angle and direction of each vector.

- a. 11° E of N
- b. 34° N of W
- c. 12° S of W
- d. 17° W of S
- e. 30° S of E

## 6. Draw and label the following vectors:

- a. 12° W of N
- b. 31° E of N
- c. 25° S of E
- d. 43° N of E
- e. 8° S of W

