Vector Representation

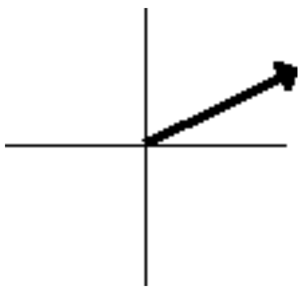
Read from **Lesson 1** of the **Vectors and Motion in Two-Dimensions chapter** at **The Physics Classroom**:

http://www.physicsclassroom.com/Class/vectors/u3l1a.html

MOP Connection: Vectors and Projectiles: sublevel 1

Vector quantities are quantities that have both magnitude and direction. The direction of a vector is often expressed as a counterclockwise angle of rotation of that vector from due east (i.e., the horizontal). For questions #1-6, indicate the direction of the following vectors.

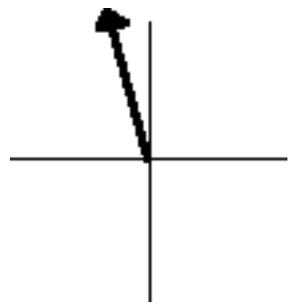
1.



CCW Dir'n: __________

magnitude: ____________

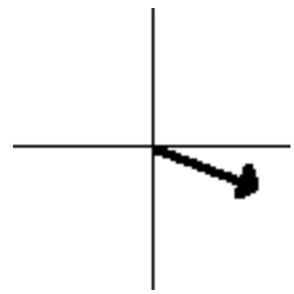
2.



CCW Dir'n: __________

magnitude: ____________

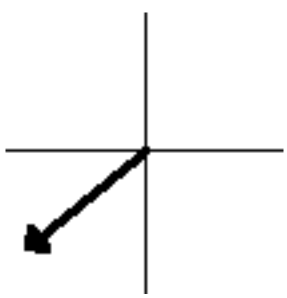
3.



CCW Dir'n: __________

magnitude: ____________

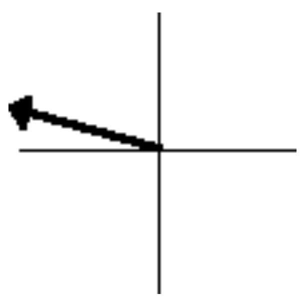
4.



CCW Dir'n: __________

magnitude: ____________

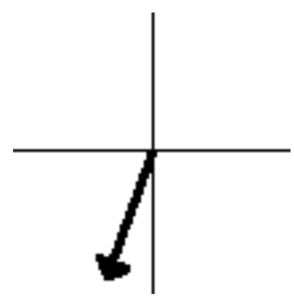
5.



CCW Dir'n: __________

magnitude: ____________

6.

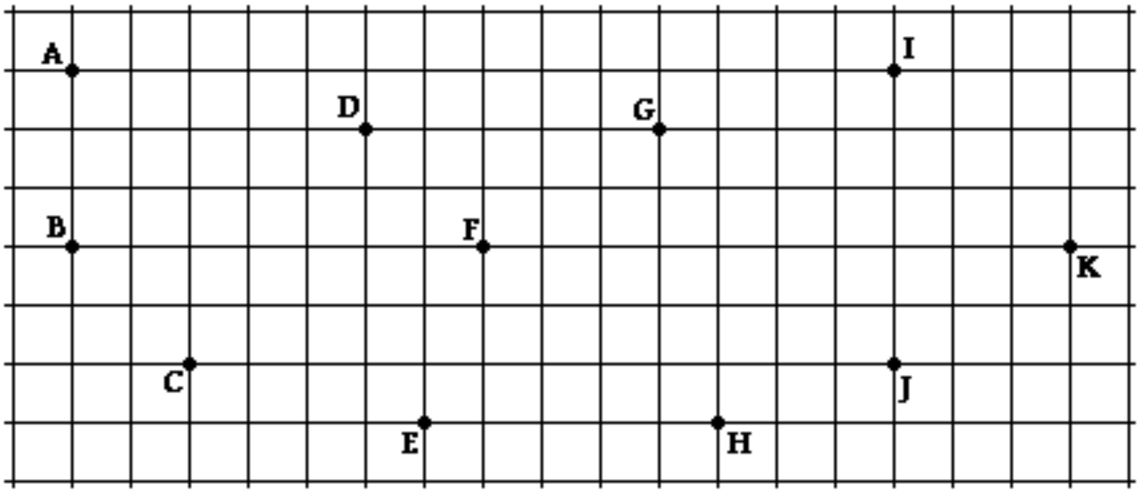


CCW Dir'n: __________

magnitude: ____________

7. The above diagrams are referred to as scaled vector diagrams. In a scaled vector diagram, the magnitude of a vector is represented by its length. A scale is used to convert the length of the arrow to the magnitude of the vector quantity. Determine the magnitude of the above six vectors if given the scale: 1 cm = 10 m/s.

8. Consider the grid below with several marked locations.



Determine the direction of the resultant displacement for a person who walks from location ...

a. A to C: ___________________ b. D to B: __________________ c. G to D: ________________

d. F to A: ___________________ e. F to E: __________________ f. C to H: ________________

g. E to K: ___________________ h. J to K to F: ______________ i. I to K to B: _____________

9. A short verbal description of a vector quantity is given in each of the descriptions below. Read the description, select a scale, draw a set of axes, and construct a scaled vector diagram to represent the given vector quantity.

a. Kent Holditnomore excused himself from class, grabbed the cardboard pass off the lecture table, and displaced himself 10 meters at 170°.	b. Marcus Tardee took an extended lunch break and found himself hurrying through the hallways to physics class. After checking in at the attendance office, Marcus moved with an average velocity of 5.0 m/s at 305°.