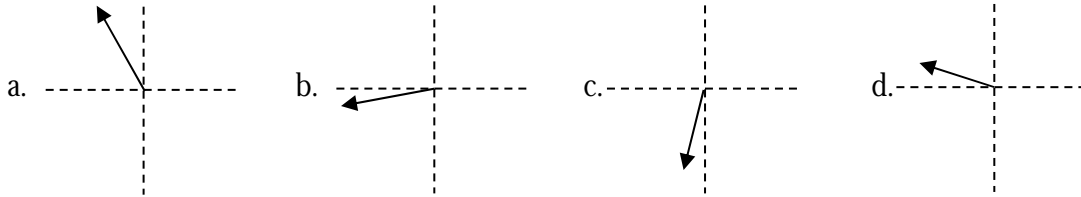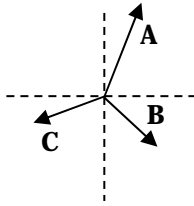# Extra Practice Problems for Chapter 4

1. Which of the following could represent a force of 12 N at 116°?
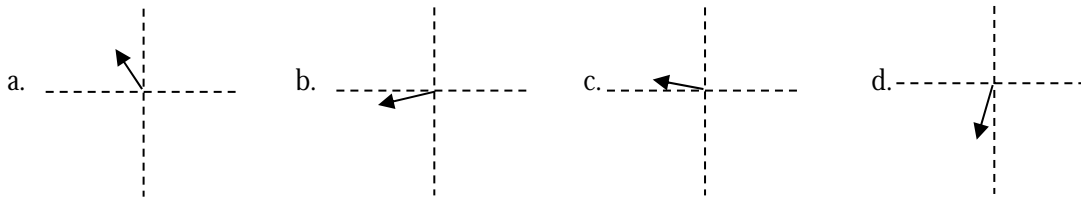
a.   b.   c.   d.

2. Using the answer you chose above, draw a force vector of 6 N at 90°.

3. Given the vectors below, draw **A** + **C** and **B** – **C**.

4. In a two-segment journey, the first displacement is 6.6 km at 125°. The second one is 3.2 km at 340°. Which vector below would represent the final displacement for this journey?

a.   b.   c.   d.

5. What are the x- and y-components of a velocity of 13.2 m/s at 211°?

6. A person walks 2.61 km due east and then 4.15 km due south. What is the magnitude and direction of the person's displacement vector?

7. A ship's captain gives her ship a velocity of 21.1 km/hr at 117°. The current has a velocity of 5.4 km/hr at 255°. What is the actual velocity of the ship?

8. Displacement vector **A** is 3.26 m at 241°, and displacement vector **B** is 4.89 m at 55°. What is the sum of those two displacement vectors?

9. An airplane needs to travel with a velocity of 626 km/hr at 38.0°. The wind has a velocity of 22 km/hr at 75.0°. What velocity should the pilot give the airplane?

10. A ship is traveling with an actual velocity of 11.8 km/hr at 165°. The engines are giving it a velocity of 13.1 km/hr at 143°. What is the velocity of the current?