

Name: _____

Date: _____

3. (I) If $V_x = 9.80$ units and $V_y = -6.40$ units, determine the magnitude and direction of \vec{V} .
5. (II) \vec{V} is a vector 24.8 units in magnitude and points at an angle of 23.4° above the negative x axis. (a) Sketch this vector. (b) Calculate V_x and V_y . (c) Use V_x and V_y to obtain (again) the magnitude and direction of \vec{V} . [Note: Part (c) is a good way to check if you've resolved your vector correctly.]
8. (II) An airplane is traveling 835 km/h in a direction 41.5° west of north (Fig. 3-34). (a) Find the components of the velocity vector in the northerly and westerly directions. (b) How far north and how far west has the plane traveled after 1.75 h?

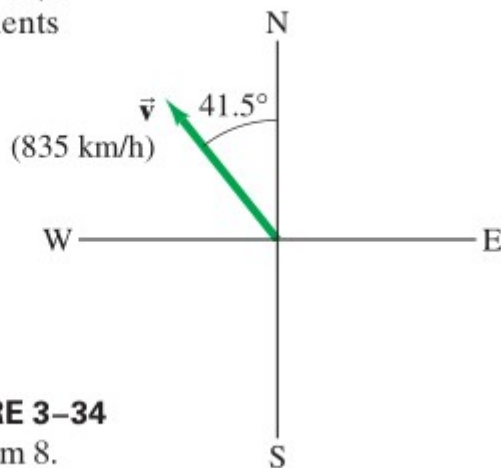


FIGURE 3-34
Problem 8.

9. (II) Three vectors are shown in Fig. 3–35. Their magnitudes are given in arbitrary units. Determine the sum of the three vectors. Give the resultant in terms of (a) components, (b) magnitude and angle with the $+x$ axis.

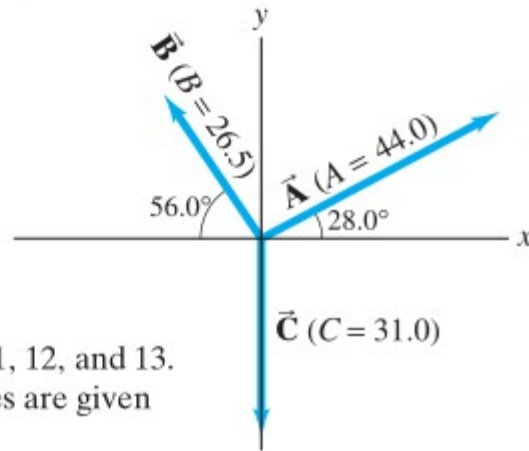


FIGURE 3–35
Problems 9, 10, 11, 12, and 13.
Vector magnitudes are given
in arbitrary units.

14. (II) Suppose a vector \vec{V} makes an angle ϕ with respect to the y axis. What could be the x and y components of the vector \vec{V} ?
15. (II) The summit of a mountain, 2450 m above base camp, is measured on a map to be 4580 m horizontally from the camp in a direction 38.4° west of north. What are the components of the displacement vector from camp to summit? What is its magnitude? Choose the x axis east, y axis north, and z axis up.