

**42.** A certain cable car in San Francisco can stop in 10 s when traveling at maximum speed. On one occasion, the driver sees a dog a distance  $d$  m in front of the car and slams on the brakes instantly. The car reaches the dog 8.0 s later, and the dog jumps off the track just in time. If the car travels 4.0 m beyond the position of the dog before coming to a stop, how far was the car from the dog? (*Hint:* You will need three equations.)

1. Vector  $\vec{\mathbf{A}}$  lies in the  $xy$ -plane. For what orientations of vector  $\vec{\mathbf{A}}$  will both of its components be negative? When will the components have opposite signs?

9. A golfer takes two putts to get his ball into the hole once he is on the green. The first putt displaces the ball 6.00 m east, the second 5.40 m south. What displacement would have been needed to get the ball into the hole on the first putt?

**11.** A girl delivering newspapers covers her route by traveling 3.00 blocks west, 4.00 blocks north, and then 6.00 blocks east. (a) What is her resultant displacement? (b) What is the total distance she travels?