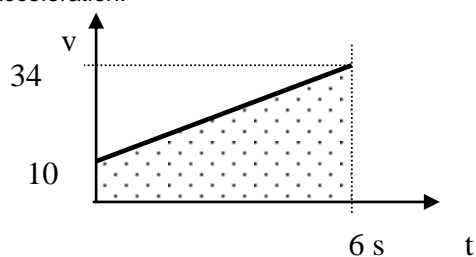


Answers to selected questions

Chapter 2

- Q3** Since fingernails grow slowly, a unit such as mm/month may be appropriate.
- Q6** A speedometer measures instantaneous speed; the speed that you are driving at a particular instant of time. You can note how it responds immediately as you speed up (accelerate) or slow down (brake).
- Q12** Yes, the velocity changes. The direction of motion has changed after the puck hits the wall, which represents a change in velocity since velocity involves both speed and direction.
- Q18** No. If the car is going to start moving, its acceleration must be non-zero. Otherwise the velocity would not change and it would remain at rest, or stopped.
- Q24** a. No. The car has a positive velocity during the entire time shown.
b. At pt. A. The acceleration is greatest since the slope between 0 and 2 sec. is greater than between 4 and 6 sec. Between 2 and 4 sec. The slope is zero so the velocity in that interval does not change.
- Q30** Yes. For uniform acceleration the acceleration is constant. Since acceleration does not change, the average acceleration equals this constant acceleration.

Q36



The area of the shaded region is
 $(6.0 \text{ s})(10 \text{ m/s}) + (6.0 \text{ s})(34 \text{ m/s} - 10 \text{ m/s}) / 2 = 132$
 m.