6. a) The acceleration is constant, so we may use the equation relating velocity, acceleration, and time for the case of uniform acceleration.

$$v = v_o + a\,t$$

$$v = 0 \text{ m / s} + (2.0 \text{ m / s}^2)(5.0 \text{ s})$$

$$v = 10.0 \text{ m / s}$$

b) The acceleration is constant, so we may use the equation relating distance, initial velocity, acceleration, and time for the case of uniform acceleration. In this case, the car is initially at rest, so the initial velocity is zero.

$$d = v_o\,t + (1/2)\,a\,t^2$$

$$d = (0 \text{ m / s})(5.0 \text{ s}) + (1/2)(2.0 \text{ m / s}^2)(5.0 \text{ s})^2$$

$$d = 0 + (1.0 \text{ m / s}^2)(25.0 \text{ s}^2)$$

$$d = 25.0 \text{ m}$$