1. A car accelerates from 36 km/h (10 m/s) to 72 km/h (20 m/s) in 100 m. What is its acceleration?
   
   a. 6.0 m/s²  
   b. 2.5 m/s²  
   c. 1.5 m/s²  
   d. 0.5 m/s²

2. Susan hits a fly-ball into right field, and it stays in the air for 4.0 seconds. What was its initial velocity upward? (Assume its initial height is negligible.)
   
   a. 160 m/s  
   b. 40 m/s  
   c. 20 m/s  
   d. 5 m/s

Useful equations:
- \[ x = \frac{1}{2} a t^2 + v_0 t + x_0 \]
- \[ v = v_0 + a t \]
- \[ v^2 = v_0^2 + 2 a (x - x_0) \]
- \[ g = 9.8 \text{ m/s}^2 \]
1. If a car decelerates from 72 km/h (20 m/s) to zero in 4.0 seconds, what g-force do the occupants experience in the horizontal direction?

   a. 0.5 g   c. 5 g
   b. 1.0 g   d. 10 g

2. How long will it take a bomb to drop from an altitude of 1000 m to the ground? Its initial velocity is 300 m/s in the horizontal direction.

   a. 0.07 sec   c. 51 sec
   b. 14 sec     d. 204 sec

Useful equations:

\[ x = \frac{1}{2} a t^2 + v_0 t + x_0 \]
\[ v = v_0 + a t \]
\[ v^2 = v_0^2 + 2 a (x - x_0) \]
\[ g = 9.8 \text{ m/s}^2 \]