

**ACCELERATION DUE TO GRAVITY – HOMEWORK**

1. In a 1979 movie, a stuntman leaped from a ledge on the CN Tower and experienced free fall for 6.0 s before opening the safety parachute. Assuming negligible air resistance, determine the stuntman's velocity after falling for
  - a) 3.0 s
  - b) 6.0 s
2. A stone is thrown from a bridge with an initial velocity of 4.0 m/s. Determine the stone's velocity after 2.2 s if the direction of the initial velocity is downward.
3. A student throws a baseball vertically upwards, and 2.8 s later catches it at the same level. Neglecting air resistance, calculate the following the velocity at which the ball left the student's hand (Hint: Assume that, when air resistance is ignored, the time it takes to rise is equal to the time it takes to fall)
4. At a certain location the acceleration due to gravity is  $9.82 \text{ m/s}^2$  [down]. Calculate the percent error of the following experimental values of  $g$  at that location:
  - a)  $9.74 \text{ m/s}^2$  [down]
  - b)  $9.95 \text{ m/s}^2$  [down]