

Problems: Chapter 1, 2 and 3

1. A 1000 kg automobile and contents accelerate at the rate of 5 m/s^2 . How much force is required in kN?
2. In Problem 1 above determine the kinetic energy of the automobile at 50 kph in kJ. The acceleration of gravity is 9.8 m/s^2 .
3. Determine the force required for a 25 lb_m bicycle to accelerate at a rate of 10 ft/s^2 in lb_f
4. Define the following:
 - a) system
 - b) closed system
 - c) open system
 - d) surroundings
 - e) property
 - f) state
 - g) process
 - h) cycle
5. Determine the unknown properties for water:

	pressure kPa	temperature C	specific volume m^3/kg	quality	enthalpy kJ/kg	entropy kJ/kgK
1	150	400				
2		30	0.001			
3		290		0.50		