1) Convert the temperature from 40 K to Fahrenheit._________ ºF

2) The surface area of a window is 1.5 m² and covered with ice. If the initial temperature of ice covering the window is –10°C and the uniform thickness of the ice is 0.5 cm, find the energy in calories required to melt the ice._________ kcal.

3) Consider 100 gallons of gasoline engine fuel with a heat of combustion equal to 20,000 BTU/lb = H.
   a) Find the energy in BTU’s released when this fuel is burned._________ BTU.

   b) If all of this energy could be converted to kinetic energy of motion, find the maximum speed in ft/s for a 3000-lb plane (Assume no drag.)_________ ft/s.
4) The solar radiation hitting the ground in Colorado is approximately 1 kW/m$^2$. If 15% of this can be converted to power a motor for a solar powered airplane, find the area in m$^2$ necessary to power a 30 hp engine. __________ m$^2$. 