SPECIFIC HEAT CAPACITY PROBLEMS (H)

Specific heat capacities:

$$\Delta E = m\, c\, \Delta\theta$$

water: 4200 J/kg °C ethanol: 2400 J/kg °C

Rubber: 2000 J/kg °C Air: 1000 J/kg °C Copper: 390 J/kg °C

1. Calculate the energy required to heat 0.5kg of copper from 20°C to 50°C.

2. Calculate the energy required to heat 25g of ethanol from -5°C to +5°C.

3. How much energy is given out when 100kg of air cools from 20°C to 10°C ?

4. A kettle uses 160kJ of energy to heat the water in it from 25°C to 100°C.

   Calculate the mass of water in the kettle in kg.

5. A spinning bicycle wheel needs to be brought to a stop by a rubber brake block. Assuming the wheel has 500J of kinetic energy that is all absorbed by the brake and that the mass of the block is 25g, how much will the temperature of the block rise by in °C?