Intro to Heat

1 Cal = 1000 cal   1 cal = 4.18J $q=mC_p\Delta T$ C_p water=4.18 J=1 cal

1. 90g of water at 5°C was warmed to 99°C. Find the energy in

    a. Joules
    b. kJ
    c. calories
    d. kcal

2. A 30g piece of gold was warmed from 20°C to 230°C. How much energy was used? Cp of gold is 0.126 J/g*K. Find the energy in

    a. Joules
    b. kJ
    c. calories
    d. kcal

3. How much heat is required to raise the temperature of 68.2g of silver from 12°C to 87°C? The Cp of silver is .235 J/g*°C

4. A 500 Calorie piece of pie was eaten. How much water (in grams) could be warmed by 30°C from this food energy?

5. It takes 3200J to raise the temperature of a 10g piece of an unknown metal from 35°C to 87°C. What is the specific heat of the metal?

6. 7440 J is absorbed by 265g of water at 16.3°C. What is the change in temperature of the water? What is the final temperature?

7. A student wants to take 4000g of water and raise its temperature from 10°C to 60°C. If slices of pie each holding 500 Cals of energy each are used to warm the water, how many slices of pie will he need?