Unit 11: Ch 16 – Calorimetry & Enthalpy Heating Curves

HEATING CURVES & ΔH:

- **Draw and label the *HEATING CURVE* below:**

Question at Hand: How is the ***total enthalpy change (ΔH)*** calculated for a substance whose temperature change ***includes*** a change in state?

- Ex: What is the ΔH for 10.0 grams of water with a total ΔT from -20.0˚C to 50.0 ˚C?

The _____ ΔH will be the _____ of ΔH of all ΔT plus ΔH of all phase changes.

ΔH_1 =

ΔH_2 = → **Total ΔH = _____**

ΔH_3 =

CALORIMETRY: Science of _____ heat based on observing _____

when a system _____ or _____ energy as heat.

CALORIMETER: Used to determine the _____ of an object by measuring the

_____ when an object's (_____) known mass at *higher temperature* is

placed in a known mass of water (_____), and ***both*** reach a final equilibrium temp.

- Heat _____ by Object = _____ Heat _____ by Water
  - _____ = _____
  - _____
- Ex: A metal at 53.5 g was heated to 100˚C and then placed into 100 g of water (initially at 23.7˚C). The metal and water were allowed to come to an equilibrium temperature of 27.8˚C.
  - Calculate the specific heat of the metal.
  - What is the most likely identity of the metal?