Laboratory Write-Ups

DATA & CALCULATIONS

Data Table and Calculation Table:

The data section of your write-up clearly shows what you have measured. A well thought out data table guides you efficiently through the lab. If you cannot figure out how to make a data table before the lab, you have not prepared for the lab carefully enough.

Make the distinction between data and calculations. For example, you do not *measure* a *change* in temperature, you measure the *initial* and *final* temperatures and *calculate* the change. ΔTemperature should not be part of your "data". This distinction is on the AP exam.

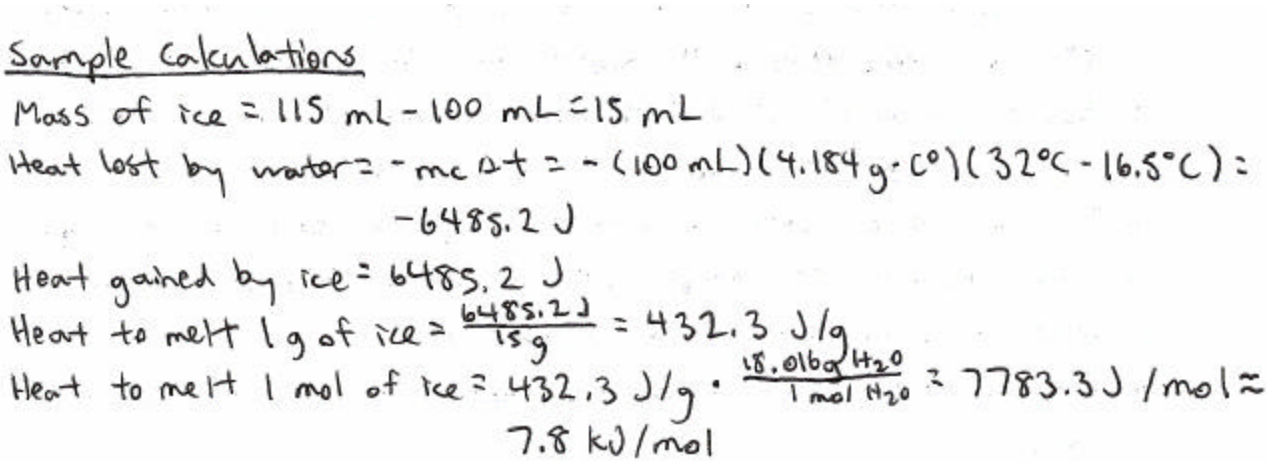
Examples:

DATA:			CALCULATIONS:		
initial volume of water	_____	±0.1 mL	mass of ice melted	_____	g
final volume of water	_____	±0.1 mL	moles of ice melted	_____	moles
initial temperature of water	_____	±0.1 °C	ΔTemperature	_____	°C
final temperature of water	_____	±0.1 °C	heat absorbed by ice	_____	kJ
			ΔH_{fus} ice	_____	kJ/mol

DATA:	Trial 1	Trial 2	Trial 3
initial volume of water (±0.1 mL)			
final volume of water (±0.1 mL)			
initial temperature of water (±0.1°C)			
final temperature of water (±0.1°C)			

Sample Calculations:

You need to show the reader how each value in your Calculation Table was derived. Units should be used. Here is a reasonably good example. Notice how the Mass of ice is given as mL, not grams (oops.)



Sample Calculations

Mass of ice = 115 mL − 100 mL = 15 mL

Heat lost by water = $-mc\Delta t = -(100\ mL)(4.184\ g \cdot C^\circ)(32^\circ C - 16.5^\circ C) =$ $-6485.2\ J$

Heat gained by ice = 6485.2 J

Heat to melt 1 g of ice = $\frac{6485.2\ J}{15\ g} = 432.3\ J/g$

Heat to melt 1 mol of ice = $432.3\ J/g \cdot \frac{18.016\ g\ H_2O}{1\ mol\ H_2O} = 7783.3\ J/mol \approx$ 7.8 kJ/mol