

Graphing Assignment

All graphs must

- be prepared using electronic tools (ie. Excel, Cricket Graph, Quattro or similar) There is a link with instructions to help you graph in Excel 2010.
- have the correct parameters on the X and Y axes (“Y is a function of X” means Y depends on X)
- have clear labels on both axes including appropriate units
- have meaningful titles (Not just y vs. x)
- be scaled so as to fill the page
- show individual data points with dots, squares, or similar
- have best fit lines generated electronically when requested

Your written responses to the questions asked should be typed into a text box on open space in the graph field

Page references are from **Tro 2nd ed. *Chemistry: A Molecular Approach***

Graphs 1: Dependence of viscosity on molar mass of small hydrocarbons.

- Use the data from Table 11.5 p 469.
- Connect the data points with a smooth curve or best fit line.
- Is viscosity directly or indirectly related to molar mass? Explain how your graph shows this.

Graphs 2: Temperature dependence of water viscosity.

- Use the data from Table 11.6 p 469 to graphically represent the dependence of water viscosity on temperature.
- Connect the data points with a smooth curve or best fit line.
- Is viscosity directly or indirectly related to temperature? Explain how your graph shows this.

Graph 3: Dependence of atmospheric pressure on altitude

- Use the data from Table 11.8 p 476 to construct this graph.
- Connect the data points with a smooth curve or best fit line.
- Does your graph indicate a direct or indirect relationship between altitude and atmospheric pressure?
- Is this relationship best described as linear or exponential?

Graph 4: Temperature dependence of the vapor pressure of dichloromethane

- Use the data from the table in Example 11.4 p 477 to construct this graph.
- Plot vapor pressure as a function of temperature.
- Connect the data points with a smooth curve or best fit line.
- Is vapor pressure directly or indirectly related to temperature? Explain how your graph illustrates this.

Graph 5: Dependence of reactant and product concentration with time

- Use the data from the table in Example 13.3 p 575 to construct this graph.
- Plot concentration as a function of time.
- Is $\Delta[\text{SO}_2\text{Cl}_2]/\Delta t$ a positive or negative number after 500 s has elapsed?

Graph 6: Dependence of standard molar entropy on electrons for atomic gases

- Use the data from the table of noble gases at the bottom of p 789.
- Plot S° as a function of total electrons in the atom.
- Is this relationship linear or nonlinear?
- Use your plot to estimate the standard molar entropy of radon.