NAME: _____ **QUIZ SECTION:** _____

Atmospheric Sciences 101 Spring 2013
Homework #2 (Due Thursday, 18 April 2013)

1. Of the following city pairs, circle the city that you would expect to have a colder/cooler winter and then give a brief (the shorter the better), plausible reason for the difference. You may have to do a little research with your atlas or try online maps at http://www.lib.utexas.edu/maps/united_states.html **or** http://www.lib.utexas.edu/maps/united_states/usa_pol01.jpg**. Consider latitude, proximity to water, prevailing winds, and elevation, but ignore small differences. [3]**

A. Minneapolis, Minnesota or Springfield, Missouri? Why? [1]

B. Crescent City, California or Plymouth, Massachusetts? Why? [1]

C. Des Moines, Iowa or New Haven, Connecticut? Why? [1]

2. Indicate the dates of the following observations for Seattle, Washington *(note that question 'E' does not refer to Seattle)*: [2.5]

A. The longest day (most daylight hours). [0.5]

B. The longest night (most hours of darkness). [0.5]

C. Equal hours of day and night. [0.5]

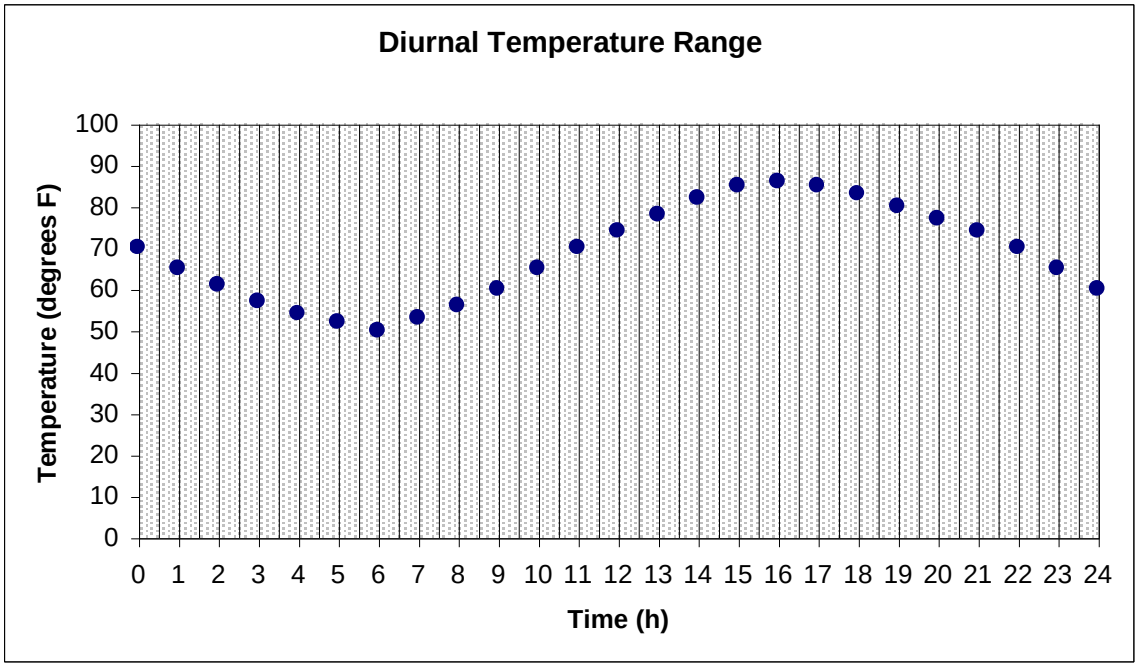
D. The day(s) would Seattle receive the most energy from the sun (assuming clear skies)? [0.5]

E. Assuming clear skies, for a location *on the equator*, what day(s) would receive the most energy from the sun? [0.5]

3. List and describe the phase transitions of water. Indicate whether energy is liberated or consumed by the water during the process. The first row has been filled in for you as an example. [2.5]

Name of Process	From	To	Energy Liberated or Consumed?
Evaporation	Liquid	Vapor	Consumed

4. Daily Temperature Cycle: The following graph shows an idealized temperature cycle of one clear 24-hour period. Use it to answer the following questions. [2]



A. At approximately what time do you think the sun rose? [0.5]

B. At what time did the outgoing terrestrial radiation just exceed the incoming solar radiation? [0.5]

C. All else being equal, what would happen to both the maximum and minimum daily temperatures on this graph if the entire 24-hour period were cloudy & why? (Hint: Would they increase or decrease?) [1]