**Humidity/Orographic Lab Name**

**Geog. 217 Date**

**(Part 1) Answer the questions. Show your work or outline the process by which you came to the answer(s). Relative Humidity RH = (absolute humidity/ potential) X 100**

1. Using the Saturation Vapor Pressure Curve (attached), describe the relationship between temperature at SVP. What does this relationship mean relative to precipitation?
2. Suppose absolute humidity was 8 mb at a temperature of 50°F (10°C). What is current relative humidity? What would relative humidity be if the temperature increased to 68°F (20°C)?
3. When absolute humidity is held constant, RH possesses a(n) (a) inverse (b) direct ratio per temperature change. No Explanation
4. What is the dewpoint (Tdew) for the air parcel in question 2?

According to the SVP Table

1. Using your SVP Table, suppose a parcel of air has a 30% RH at 80°F. What will its Tdew be?
2. Using the SVP table calculate the RH at following locations

Temp (Potential H) T dew (Absolute H)

1. shaded grassy area 70°F 60°F
2. sunny asphalt/concreate area 78°F 52°F
3. Calculate the relative humidity at each location.

1. Why does the shaded grassy area possess a higher T dew and RH and the sunny asphalt area possess lower Tdew and a higher RH? Defend your answers

**Part 2: See Diagram of Sierra Nevada**

1. Label the temperatures on the diagram at all listed elevations.
2. When the air comes ashore at S.F. with a Tdew 30.5°F (-.7°C) and the absolute humidity is 5.8 mb. What is the relative humidity in San Francisco?
3. Why is there less cooling from 5,000 to 10,000 feet when using the WALR versus sea level to 5,000 ft on the windward slope when using the DALR?
4. Where is the snow level (freezing line) on the west (windward) slope? How about the east (leeward) slope? See snow level handout for extra help.
5. What is the dominant mode of precipitation on the west (windward) slope?
6. Notice Reno at 4,500 ft is warmer (less cold) than 3,000 ft on the windward slope. How can you explain this seeming strange temperature situation? **Think in terms of Qe**