Meteorology Saturation Questions

1. What is black ice? When and where does it form? (note: Temperature vs. Saturation)

1. Why does it take food longer to cook or sometimes never cook at higher elevations?
2. Define diabatic:
3. Why do I get chilled when I step out of the pool?
4. Why does melting ice, warm a cellar that contains bottled fruit?
5. Why do fruit growers, spray their crops with water, the night before they realize that the temperatures will go below freezing?
6. You are taking a shower with warm water, some of which is evaporating into the room air. You notice that before the room air become noticeably foggy, condensation has already begun forming on your bathroom mirror. Why?

1. Under what atmospheric and surface conditions are we likely to get frost on the ground?

1. What is a psychrometer? Describe it and what does it measure?

1. Let us suppose you measured the dry temperature to be 80°F, and a wet bulb temperature of 66.5°F. Then your weather station says it to be a 50% Relative Humidity.
2. What is the Dew Point temperature? (Hint: Look at the tables)
3. If the day is calm and you don’t expect a change in Air Mass, what will be the lowest temperature that you can possible get by morning? Why?

1. I want to kill the bugs in the water from a river, that would make me sick at 15,000 ft. elevation. I’m thirsty and I don’t have an expensive water-filter. How would I do accomplish this task?

(Hint: Water does not boil at 100 degrees Celsius at that elevation)

1. How does the actual, dew point, and wet bulb temperatures compare when the air is saturated? Why?
2. Why do you get dew on the grass in the desert in the morning? (Hint: Think of the amount of Vapor Capacity in the desert air and it doesn’t really get that cold at night in the desert)
3. When it snows, does it heat or cool the environment? Explain.
4. When it rains, does it heat or cool the environment? Explain.
5. When lake water evaporates, does it heat or cool the environment? Explain.