Meteorology Moisture Questions

1. Santa Ana winds represent a fire hazard, in large part because they’re dry. The air stars off in the desert, where it is not only cool, but it may be relatively moist as well. So, why do they end up hot and dry?
2. Define adiabatic:

1. Why does rising air lead to clouds?

1. Once clouds form, does this change the behavior of how air changes on ascent? Explain.

1. What is the difference between vapor capacity and vapor supply?
2. What is relative humidity and how is it calculated?

1. What has more water vapor, A foggy winter day in Utah or a hot summer day in Death Valley? Explain.

1. Why is it better to shock your friend with static electricity in the Winter-time verses the Summer-time?
2. At the temperature of 40 degrees, what is the Mixing Ratio or Vapor Capacity? (Hint: Use the table)
3. True or false: Water vapor can condense to liquid in sub-saturated air. Why?

1. True or false: Water vapor always condenses to liquid in saturated air. Why?
2. In the premier episode of the TV series “Star Trek: Voyager”, a powerful entity said he performed an experiment on a populated planet that inadvertently rendered it a desert. His experiment removed all particles from the planet’s atmosphere that permitted water vapor to condense upon them, permanently ending the possibility of rainfall on the planet. Does this scenario make sense?

1. Explain the Bergeron process for both rain and ice?
2. What is the contrail of a 747 Jet airliner at 60,000 foot elevation? Why does it form?

(Hint: Supersaturation)