



Figure 2

5. a. In Figure 2, the little house is situated on a cold, snowy prairie. The outside air temperature and dew point for this day are shown. What is the relative humidity of the outside air?

Relative humidity of outside air \_\_\_\_\_ %

- b. Suppose the window in the little house is open just a crack and the cold outside air flows inside. If no water vapor is either added to or removed from the outside air as it blows into the house, what would be the dew-point temperature of the air inside?  
 \_\_\_\_\_ °F

Further suppose that the radiator inside the house warms the air to a comfortable 70°F. What would be the relative humidity of the air inside this little house? (Hint: use the formula for calculating relative humidity given in problem 2e and the vapor pressures given in Table 1.)

Relative humidity of inside air \_\_\_\_\_ %