NAME: _____ QUIZ SECTION: _____

Atmospheric Sciences 101 Winter 2015
Homework #3 (Due Thursday, February 5, 2015)

1. Humidity [2]

List what happens to the following moisture quantities if the temperature increases and no moisture is added to the air. [0.25 pts each]

Saturation vapor pressure: _____

Dew point temperature: _____

Vapor pressure: _____

Relative humidity: _____

List what happens to the following moisture quantities if water vapor is added to the air and the temperature does not change. [0.25 pts each]

Saturation vapor pressure: _____

Dew point temperature: _____

Vapor pressure: _____

Relative humidity: _____

2. Fog

In each case below, name the type of fog (mixing fog, radiation/valley fog, and advection fog) and *briefly describe the process* that resulted in the fog. [3]

A. On a *spring day* along the coast of southern Oregon there is steady westerly winds and fog that lasts through much of the day. [1]

B. During the *winter* in Seattle, several days of rain are followed by *clear skies, colder temperatures, no wind,* and a fog that occurs during the night and part of the morning. [1]

C. Early in the fall, after the first very cold night, wisps of fog are seen rising off the surface of Lake Washington. [1]

3. Air Temperature Controls [4]
For the following pairs of locations, <u>circle the location</u> that best fits the description, and <u>list the main temperature control</u> in the comparison. You may have to look up locations to check the latitude, elevation and proximity to bodies of water (ignore small differences).

A. Which locations would generally have a cooler/colder summer?

i. Pikes Peak, Colorado or Kansas City, Missouri

ii. San Francisco, California or Richmond, Virginia

iii. Bergen, Norway or the point at (62°N 45°W)

B. Which locations would you expect to have the largest annual temperature variation?

i. El Paso, Texas or Billings, Montana

ii. Portland, Oregon or Minneapolis, Minnesota