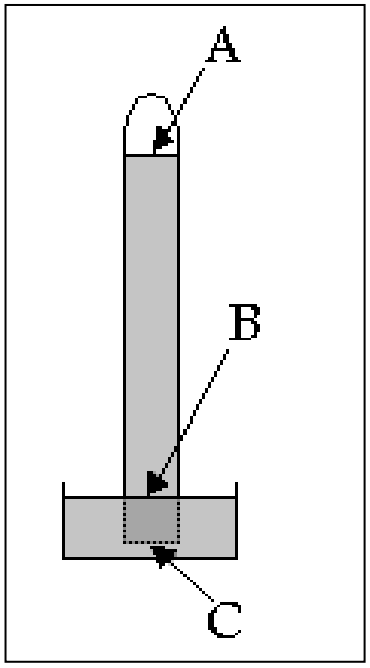
NAME: _____ QUIZ SECTION: _____

Atmospheric Sciences 101 Fall 2014
Homework #1 (Due Wednesday, October 8, 2014)

1. Atmospheric pressure is defined as the weight of the atmosphere above a surface. The figure below represents a mercury (Torricelli) barometer. The atmospheric (barometric) pressure is measured to be 1000mb. [4]



A. At the top of the column of mercury (point **A**), what would be the pressure in millibars (mb)? [1]

B. At point **B** (level with the surface of mercury in the surrounding dish), what would be the pressure in millibars due to the weight of mercury? [1]

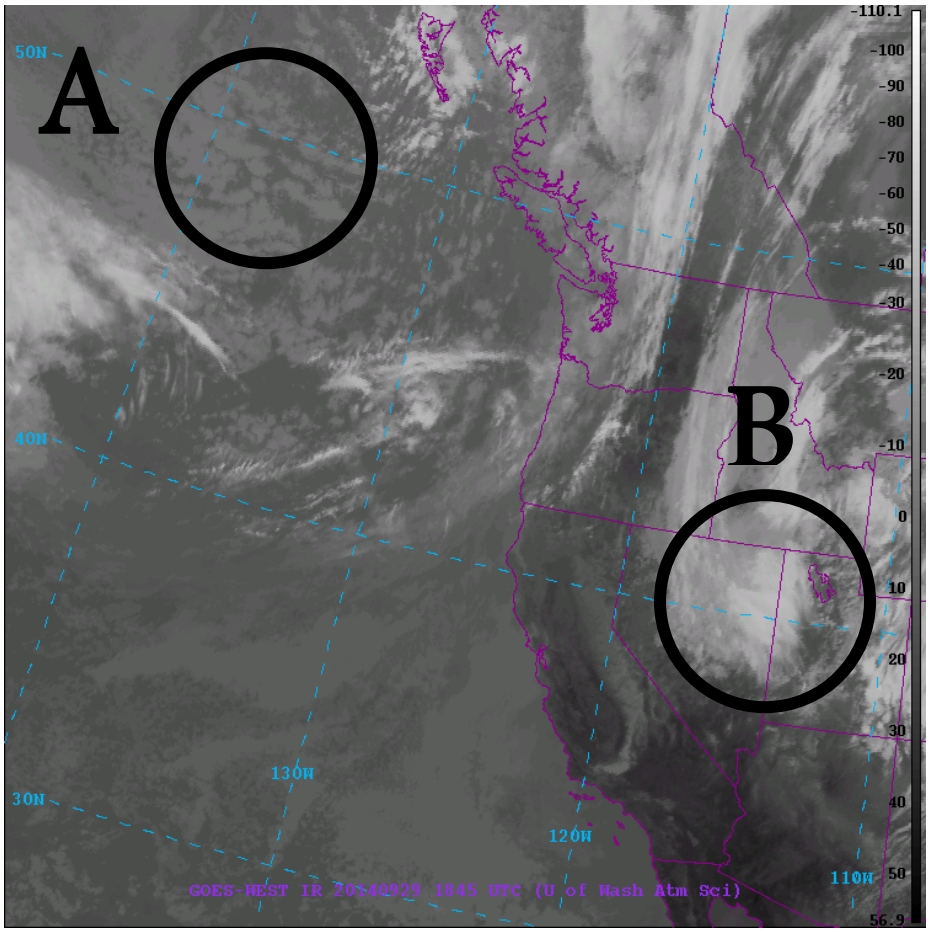
C. How would the pressure at point **C** (due to the weight of mercury in the column) compare to that of point **B**? [1]

D. If the atmospheric pressure were to increase, what will happen to the mercury column height? [1]

2. In the IR satellite image below, two cloudy regions are circled [2]

A. In which region (A or B) are the cloud tops higher? [1]

B. How can you tell? [1]



3. What is the boiling point of pure water in: [1]

A. ____ °C

B. ____ °K

C. ____°F

4. Temperature and Latent Heat Transfer [2]

A. As temperature increases what happens to the kinetic energy of the molecules? [1]

B. Dry ice (frozen carbon dioxide) changes directly from solid to gas. What is this process called? [0.5]

C. During this process, is latent heat released to or absorbed from the surroundings? [0.5]

5. The terrain map below shows the location of the Langley Hill coastal radar (star). Would this radar help you see precipitation in Port Angeles, WA (shown by cloud symbol)? Why or why not? [1]