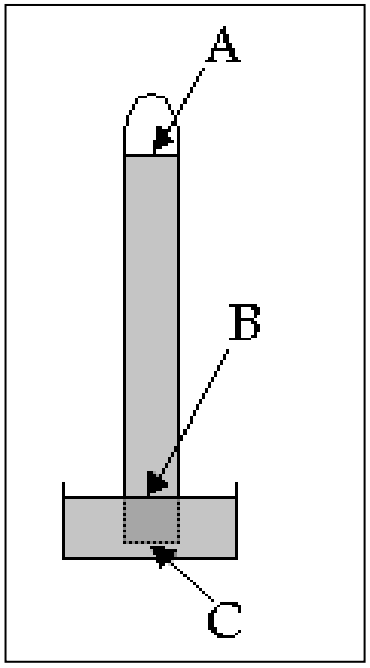
NAME: _____ QUIZ SECTION: _____

Atmospheric Sciences 101 Winter 2015
Homework #1 (Due Thursday, January 15th 2015)

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 988mb. [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]

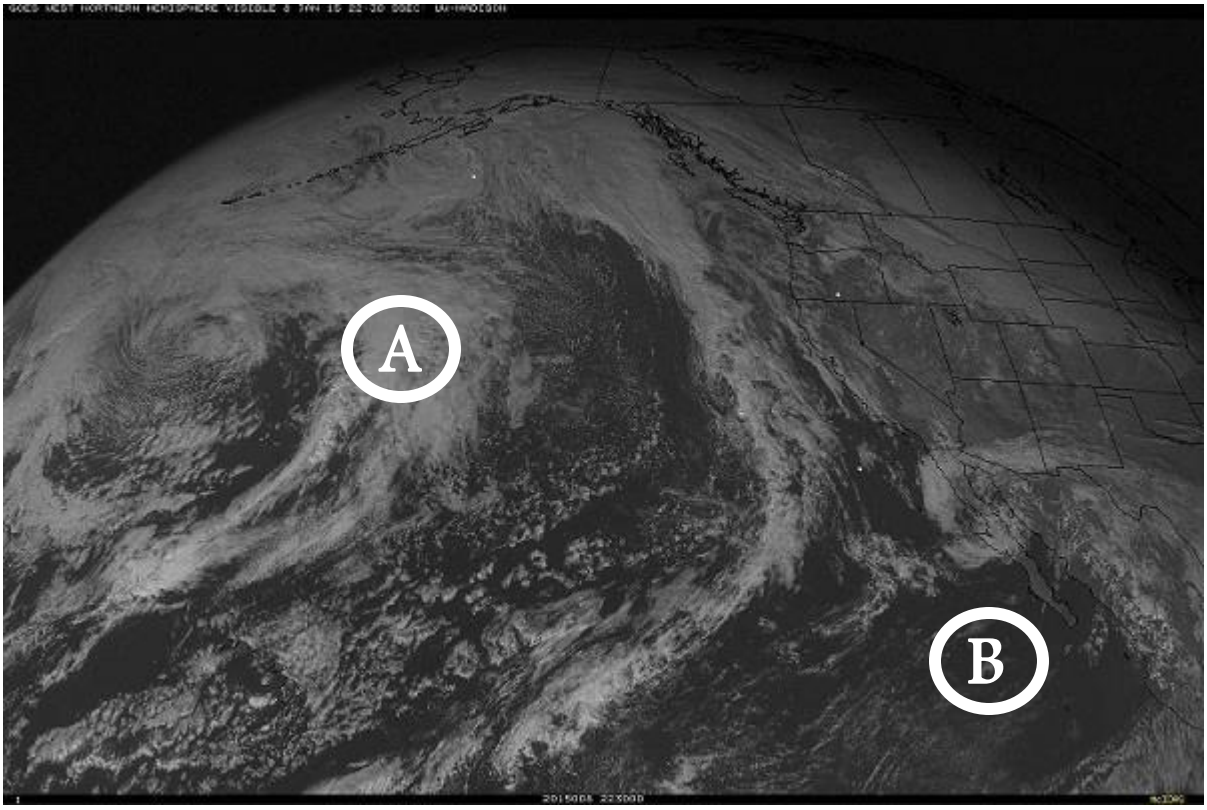
D. If the atmospheric pressure were to decrease, what will happen to the mercury column height? [1]

2. Temperature and Latent Heat Transfer [1]

A. As temperature increases what happens to the kinetic energy of the molecules? [0.5]

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

3. Below is a recent visible satellite image over western North America and the Pacific. Which region (A or B) contains the more dense covering of clouds? [1]



4. If you wanted to determine which cloud top heights were higher, would you use visible or IR satellite imagery? Explain [2]

5. In the troposphere, the temperature generally (increases / decreases) as altitude increases. (circle correct answer). [1]

6. What is the freezing point of pure water in: [1]

A. ____ °C

B. ____ °K

C. ____°F