

ATMO 1300 Section 001
In-class Worksheet #1
July 13th, 2017

1. What are the 3 components of the atmosphere? Think particles that exist in the atmosphere, not just gases.

2. a. Name 2 atmospheric permanent gases (there are three!) :

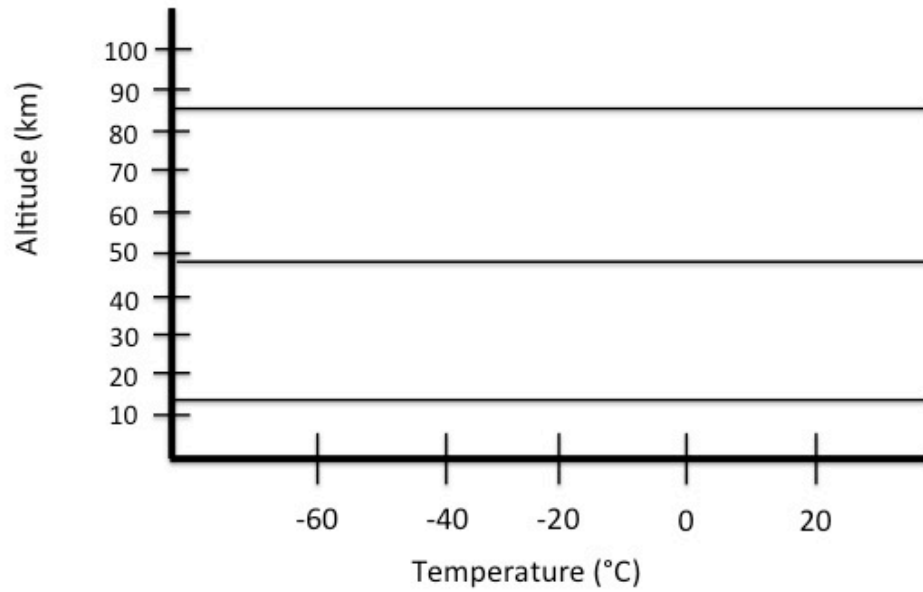
- b. Name 2 variable gases in the atmosphere, and describe why they are important:

3. What are the 5 ways energy is transferred in the atmosphere?

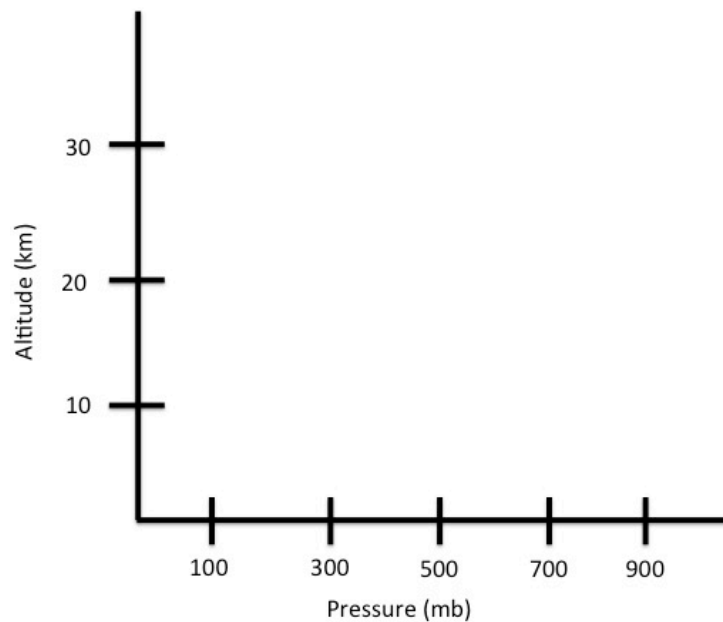
4. Why is the energy transfer process of convection in the polar regions an inefficient heat transfer mechanism (hint: think conduction)?

5. What are the two characteristics needed to classify a radiation wave (hint, think of quantity and quality)?

6. On the plot below, label the 4 layers of the atmosphere based on temperature. Also draw the atmospheric temperature profile through all 4 layers.



7. On the plot below, draw the atmospheric pressure profile. Does atmospheric pressure decrease faster in the lower atmosphere or in the upper atmosphere?



Fill-in-the-blank

- 8) _____ is the study of day-to-day variations of the atmosphere and _____ is the study of long-term trends.
- 9) The source of all Earth's energy is _____.
- 10) The "ARTS" acronym stands for the radiative properties _____, _____, _____, and _____.
- 11) _____ is the process of transporting energy and mass in the vertical.
- 12) _____ and _____ radiation contribute to the energy balance of the surface of the earth (hint: think electromagnetic spectrum of waves)