**GEOS 113 – LAB #3**

**NOVA: Earth From Space**

You will need access to a computer with internet capabilities. Watch the video called *Earth from Space*, a production from NOVA on PBS and take notes. The whole video is approximately 2 hours long, but you need only watch the first 50 minute section on Earth’s weather.

Watch it free here: <https://www.pbs.org/wgbh/nova/video/earth-from-space/>

**Earth’s Energy Balance and Temperature Patterns**

1. Circle the correct answer in the parentheses: Earth is an (open or closed) system for energy. Earth is an (open or closed) system for matter. (2 pts)
2. What effect do large ice sheets or glaciers have on the net absorption or reflection of solar energy? Explain your answer using the term *albedo*. (5 pts)
3. Circle the correct answer in the parentheses: In what form (longwave or shortwave) is the incoming solar radiation from the sun? In what form (longwave or shortwave) is the reradiated energy to space from clouds and the atmosphere? (2 pts)
4. Suppose you live in San Francisco (coastal city) and have relatives that live in central Kansas (middle of North American continent). Explain which location will experience a larger swing in annual temperature. (5 pts)
5. True or False: your body temperature in Kelvins indicates your molecules have zero motion. (1 pt)
6. In the *Star Trek: The Next Generation* season 2:12 episode, *The Royale*, Lt. Commander Geordi LaForge states a surface temperature reading on a distant planet as being -291 degrees Celsius. Explain why that must be a faulty sensor reading. (5 pts)