Physical Geography Worksheet #1 Instructor: McGlade Name\_\_\_\_\_\_\_\_\_\_\_\_

See Moodle for due date.

Show all work (except for #1). No credit will be earned if correct calculations are not evident.

1. Identify the latitude of the sub solar point on the following days, no calculation needed (0.5 pts. each)

a. September 22

b. June 22

c. December 22

d. March 22

2. Calculate the solar altitude for the following latitudes for June 22. Assume solar noon. (2 pts. each)

a. Tropic of Cancer

b. Tropic of Capricorn

c. 40º N. latitude

d. Antarctic Circle

3. Calculate the solar altitude for the following latitudes for the September 22 Equinox. Assume solar noon. (2 pts. each)

1. Salem Oregon
2. 66.5º North
3. 66.5 º South
4. The North Pole

4. Assume that the higher the solar altitude, the greater the risk of sunburn. A friend of yours states that on June 22, she was in Brazil at a latitude of 20 degrees S. She claims that the risk of sunburn is greater there than in Oregon (45 N latitude) for the same date. Is your friend correct? Assume solar noon for both locations. (2 pts.)

5. For October 5, the analemma posted in Moodle shows that the solar declination (the latitude of the subsolar point) is how many degrees?\_\_\_\_\_ Thus, the solar altitude anytime during the day here is (lower/higher) than it was on the Autumnal (Fall) Equinox less than two weeks ago? What is the solar altitude at solar noon on October 5 here at 45 degrees N?