

Homework 6

Quiz Date: Tuesday, November 28, 2017 during class

The quiz is based on the following material: Lecture 12, Lecture 13, Lecture 14, and the problems in Homework 6.

Problem 1: 6.1, 6.2 (skip part c), 6.3 (skip part c), 6.6, and 6.8 from the textbook.

Problem 2:

- a. Calculate the extraterrestrial solar irradiation on January 15 and July 31 by using the approximation on Slide 21 of Lecture 12. State all the units.
- b. State the reason of why, in the Northern hemisphere, the extraterrestrial solar irradiance is higher on a winter day than it is on a summer day.
- c. State three factors that causes the variation of solar position in the sky.

Problem 3: Approximate the total direct beam radiation at solar noon on a clear November 15 in Chicago at latitude $l=0.731$ radians.