

**KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF ELECTRICAL ENGINEERING**

EE 672 SATELLITE COMMUNICATIONS

HOME WORK # 2

1. Textbook 2-7.
2. Textbook 2-10.
3. Textbook 2-11.
4. The Virginia Tech earth station is located at 80.438° W longitude and 37.229° N latitude. Calculate its look angles and range to a geostationary satellite whose sub-satellite point is located at 121° W longitude.
5. Find the look angles from the earth stations listed below to each of the geosynchronous satellites listed. If a satellite is not visible from the earth station, then indicate so.

Earth stations:

- | | |
|-------------------------|--------------------------|
| a. Andover, Maine | 44 deg 48 min 59 s North |
| | 70 deg 42 min 52 s West |
| b. Carnarvon, Australia | 24 deg 52 min 13 s South |
| | 113 deg 42 min 13 s East |

Satellites:

- | | |
|--------------------------------|--------------------|
| a. COMSTAR D-3 (U.S. domestic) | 87° West |
| b. COMSTAR D-4 (U.S. domestic) | 127.5° West |
| c. BSE-2 (Japan) | 110° East |