

## MATH& 142

### Sec. 6.2 - Applications of Right Triangle Trigonometry (In-class Examples)

1. A 50 ft. pole has a support wire that runs from its top to the ground with an angle of depression of  $75^\circ$ .
  - (a) How far from the base of the pole does the wire connect to the ground?
  - (b) How much wire is used?
2. A flat 12 ft. plank rests with one end on the ground and the other end upon a 4 ft. ledge.
  - (a) How far from the base of the ledge is the far end of the plank?
  - (b) What is the angle of elevation?
3. At a certain distance, the angle of elevation to the top of a building is  $60^\circ$ . From 40 ft. further back, the angle of elevation is  $45^\circ$ . Find the height of the building.
4. A building is 60 ft. high. From a distance at a point  $A$  on the ground, the angle of elevation to the top of the building is  $40^\circ$ . From a point closer the building (point  $B$ ), the angle of elevation is  $70^\circ$ . Find the distance between  $A$  and  $B$ .
5. A plane flies 1.3 hours at 110 miles per hour on a bearing of  $40^\circ$ . The plane then turns and continues another 1.5 hours at the same speed on a bearing of  $130^\circ$ . How far is the plane from the starting point?