Assignment #1

Dear CVG 2171 students,

Please solve the problems below and return them to you TA at the next tutorial session.

1- On a large lake without waves, how far from shore is a sailboat when the top of its 30-ft mast disappears from the view of a person lying at the water's edge?

2- Similar to Problem 1, except for a 10-m mast and a person whose eye height is 1.5 m above the water's edge.

3- Prepare a set of level notes for the data listed. Perform a check and adjust the mis-closure. Elevation of BM 7 is 852.045 m. If the total loop length is 1500 m, what order of leveling is represented? (Assume all readings are in feet)

POINT	+S (BS)	−S (FS)
BM 7	9.432	
TP 1	6.780	8.363
BM 8	7.263	9.822
TP 2	3.915	9.400
TP 3	7.223	5.539
BM 7		1.477

4- A differential leveling circuit began on BM Hydrant (elevation 4823.65 ft) and closed on BM Rock (elevation 4834.47 ft). The plus sight and minus sight distances were kept approximately equal. Readings (in feet) given in the order taken are 2.65(+S) on BM Hydrant, 3.51 (−S) and 7.23 (+S) on TP1, 5.04 (−S)

and 11.41 (+S) on BM 1, 8.58 (−S) and 7.65 (+S) on BM 2, 4.23 (−S) and 7.53 (+S), on TP2, and 4.34 (−S) on BM Rock. Prepare, check, and adjust the notes.

5- Reciprocal leveling gives the following readings in meters from a set up near A: on A, 1.365; on B, 4.928, 4.924, and 4.926. At the setup near B: on B, 4.251; on A, 0.687, 0.688, and 0.689. The elevation of A is 564.872 m. Determine the mis-closure and elevation of B.

Good luck,