EM375 SURVEY LAB

The horizontal distance, *d*, between two remote survey stations identified as S1 and S2 can be measured with a theodolite. The calculation is:

$$d = \sqrt{x_{S1}^2 + x_{S2}^2 - 2x_{S1}x_{S2}\cos(q_{S2} - q_{S1})}$$

Where x_{S1} and x_{S2} are the distances from the theodolite to stations S1 and S2 respectively, and q_{S1} and q_{S2} are the horizontal angles between an arbitrary direction and the stations.

The uncertainties for the instrument you are using are:

w_x = 0.025 ft
w_q = 20 seconds of arc

MEASURE AND RECORD:

Distance from theodolite to S1 _____ft

Angle from arbitrary direction to S1 _____

Distance from theodolite to S2 _____ft

Angle from arbitrary direction to S2 _____

CALCULATE:

Distance between stations _____ ft

Uncertainty in the distance _____ ft

SUBMIT:

No report is required for this lab