The ratio of two sides of a triangle is 9 : 7, and the included angle is 47° 25′, find the other angles.

Given, log 2 = .3010300

L tan 66° 17′ 30″ = 10.3523942

L tan 15° 53′ = 9.4541489

diff. 1^{l} = 4797

8. Standing at the Head Master's residence, the height of which is 92 feet above the Lake I observe the angular elevation of a cloud to be 75°, and the angular depression of its reflection in the Lake to be 30°; find the height of the cloud.

PRACTICAL SURVEYING AND USE OF INSTRUMENTS.

1. Describe the Theodolite and Gunter's Chain.
2. Find by the Theodolite and Chain, the distance of the Station from the Head Master's boat house; also the distance of the Station from Tollendal.
3. From the gate leading into the Head Master's grounds observe the angle of elevation of the flagstaff on the summit of the hill; go 60 feet nearer, and again observe the angle of elevation. Given the height of the flagstaff to be 60 feet, find the inclination of the hill to the horizon.
4. Find the area of the School grounds.