

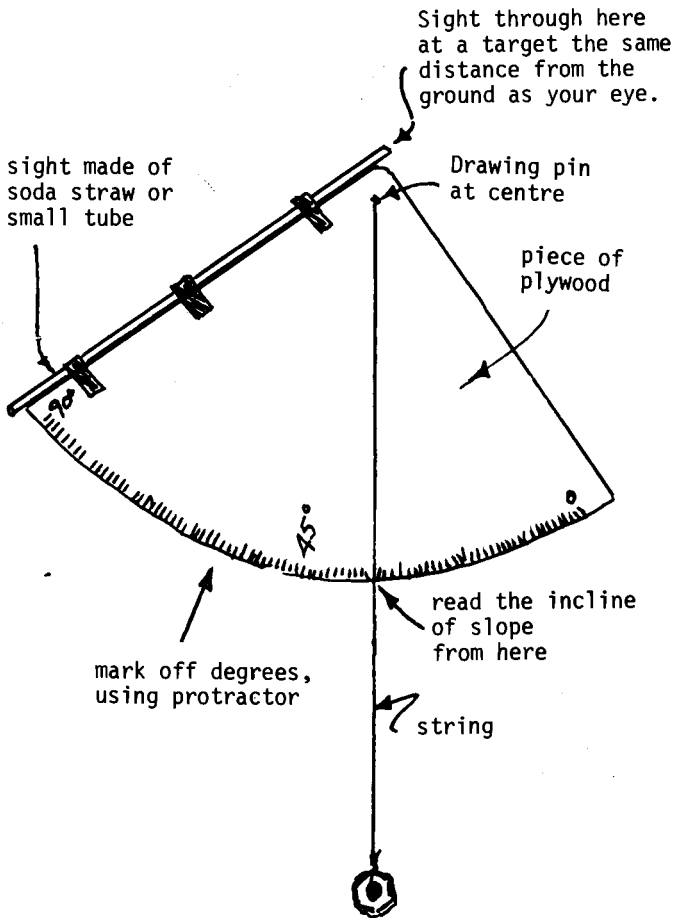
INCLINOMETER

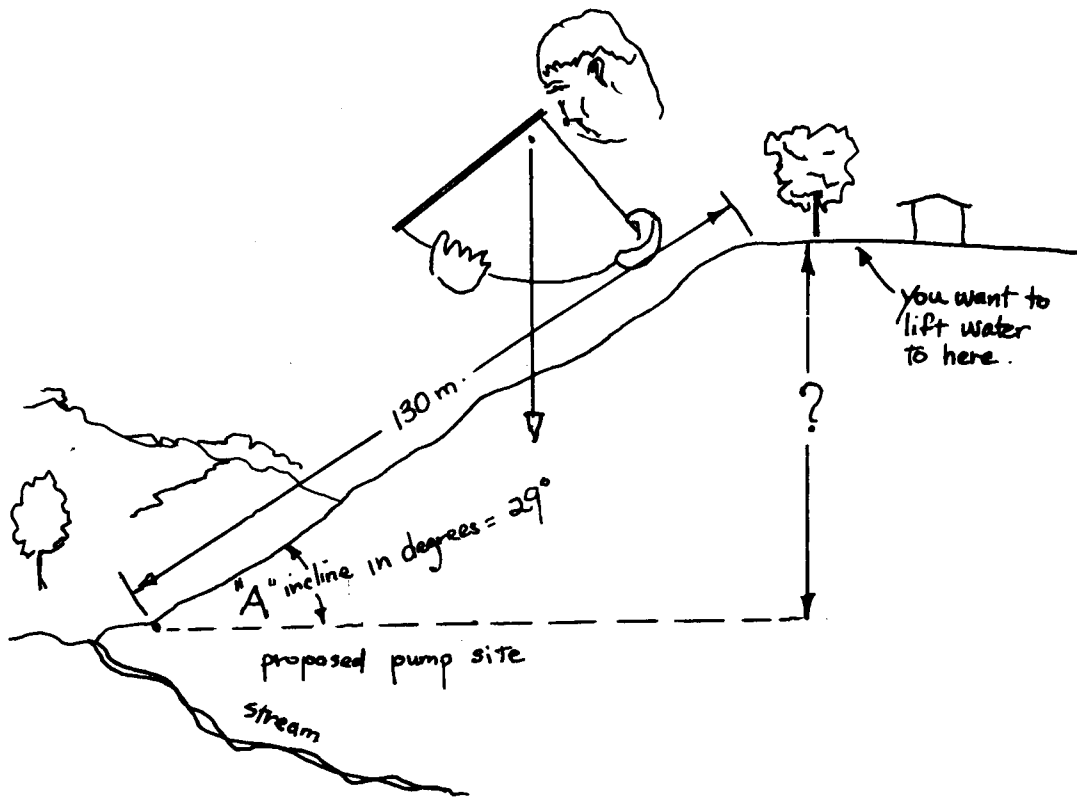
A simple inclinometer can be most useful in making approximate measurements in difficult situations when more precise instruments are not available.

Determine: slopes of hills for classifying land
road grades
heights of trees
widths of rivers
falls for water systems
contours for terracing or planting

To find the approximate elevation of a place above a pump site when you have no surveying instrument:

1. Measure the distance along the slope.
2. Measure the incline or slope of the hill using the home-made inclinometer.





3. Compute the height, using a table "Natural Values of Trigonometric Functions". From trigonometry we have the following formula:

The Sin of
any angle "A" = $\frac{\text{opposite}}{\text{hypotenuse}}$ (perpendicular)
(distance)

$$\sin 29^{\circ} = \frac{?}{130 \text{ m}}$$

In the table at the back of a math book we find that the $\sin$ of $29^{\circ} = .4848$.

$$.4848 = \frac{?}{130 \text{ m}}$$

$$\begin{aligned}\text{or } ? &= .4848 \times 130 \\ &= 63.02 \text{ m}\end{aligned}$$

4. If the hill is irregular, do it in two or more stages.

Suggested by F. Keating, Goroka.

NOTE: degrees slope and percent slope are not the same. 10 percent slope means 10 metres rise in 100 metres. If you don't know Trigonometry, plot your case on a piece of paper with a ruler and protractor.
Or, a rough guide:
Angle in degrees = % slope X.6