



Clinometer Quick Guide



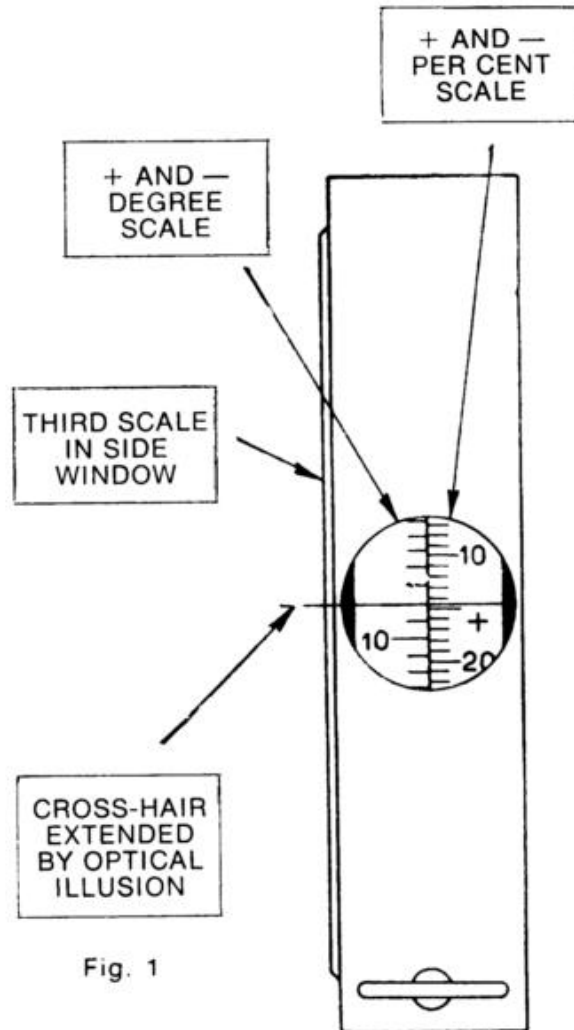


Fig. 1

Keep both eyes open

Degree Scale

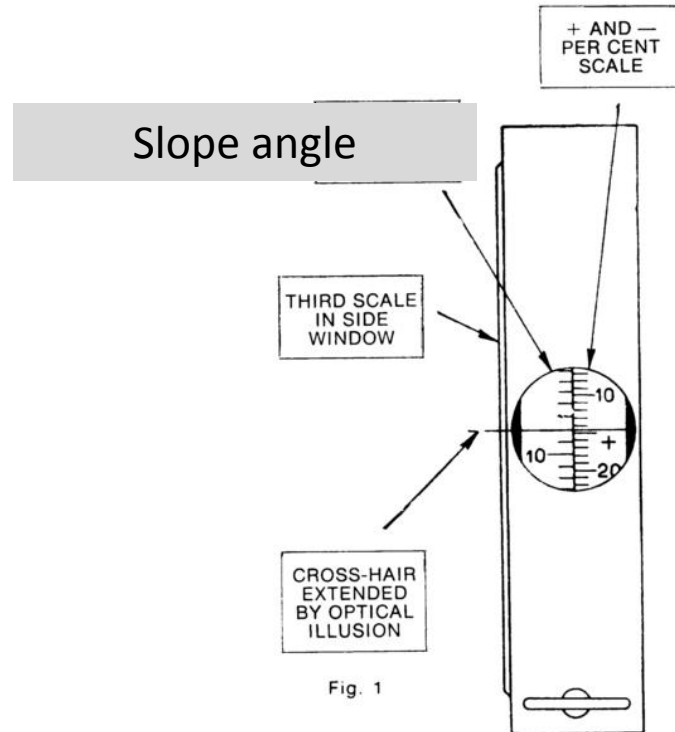
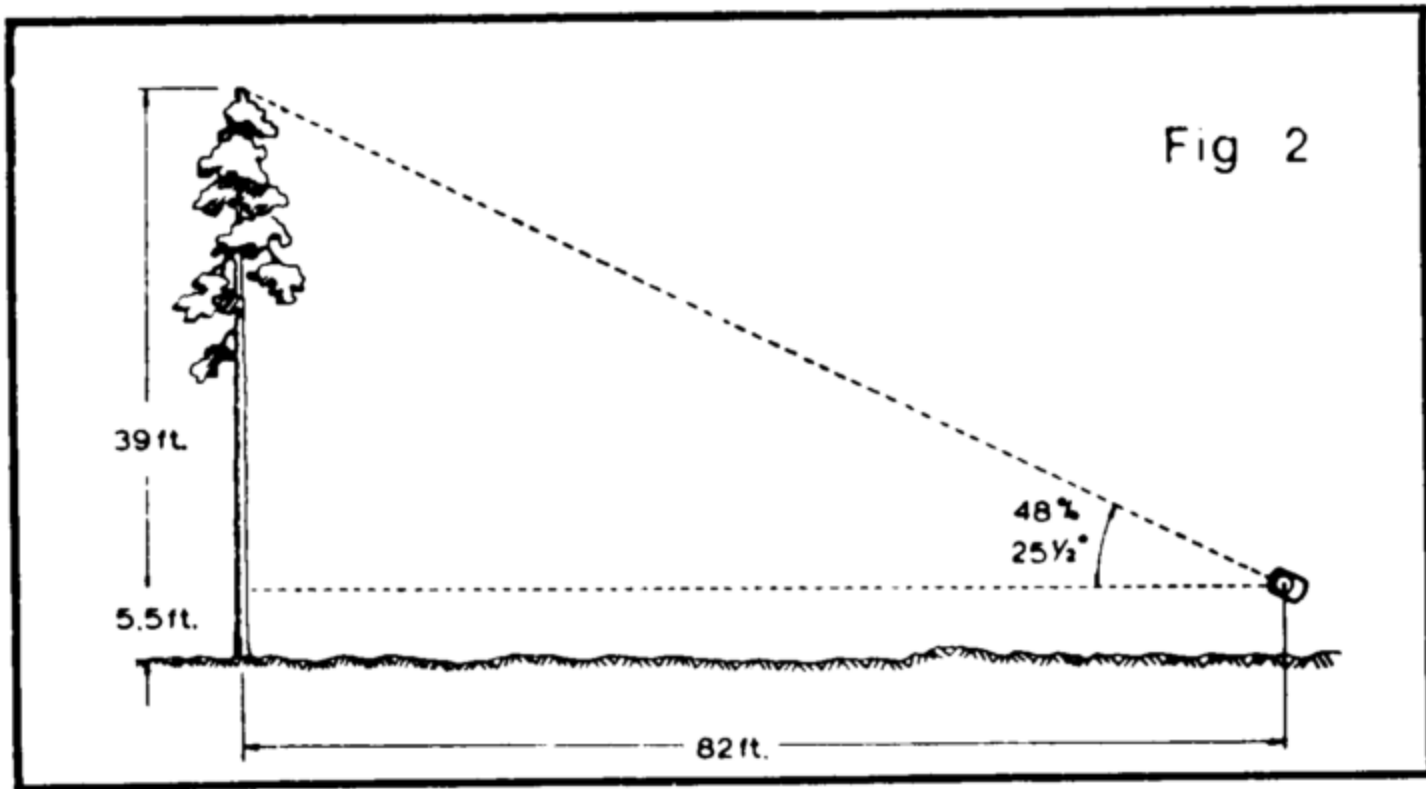


Fig. 1

Degree Scale (cont.)



$$\begin{aligned}\tan 25.5^\circ &= \text{adjacent leg (82 ft)} * \text{opposite leg (height)} \\ \text{height} &= \tan 25.5^\circ * 82 \text{ ft} \\ \text{height} &= 39.11 \text{ ft}\end{aligned}$$

Percentage Scale

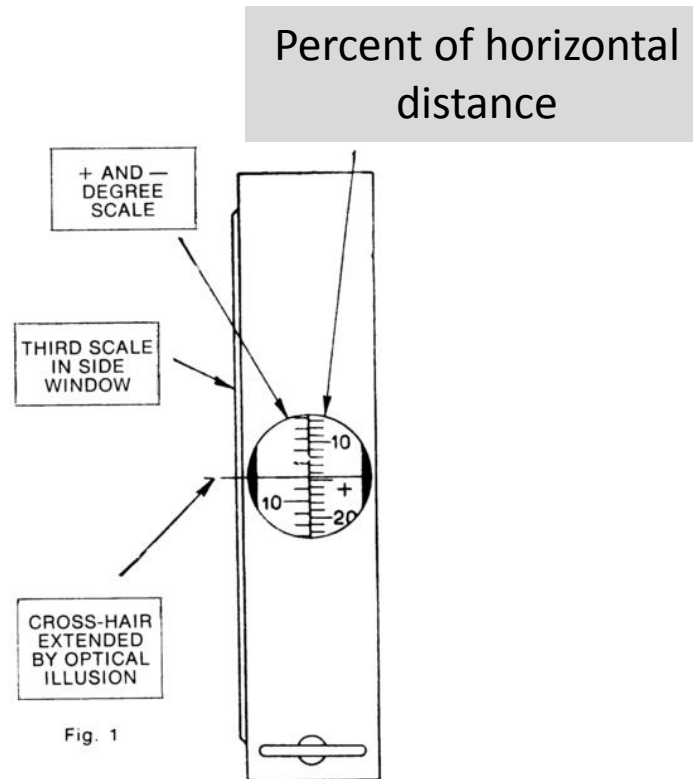
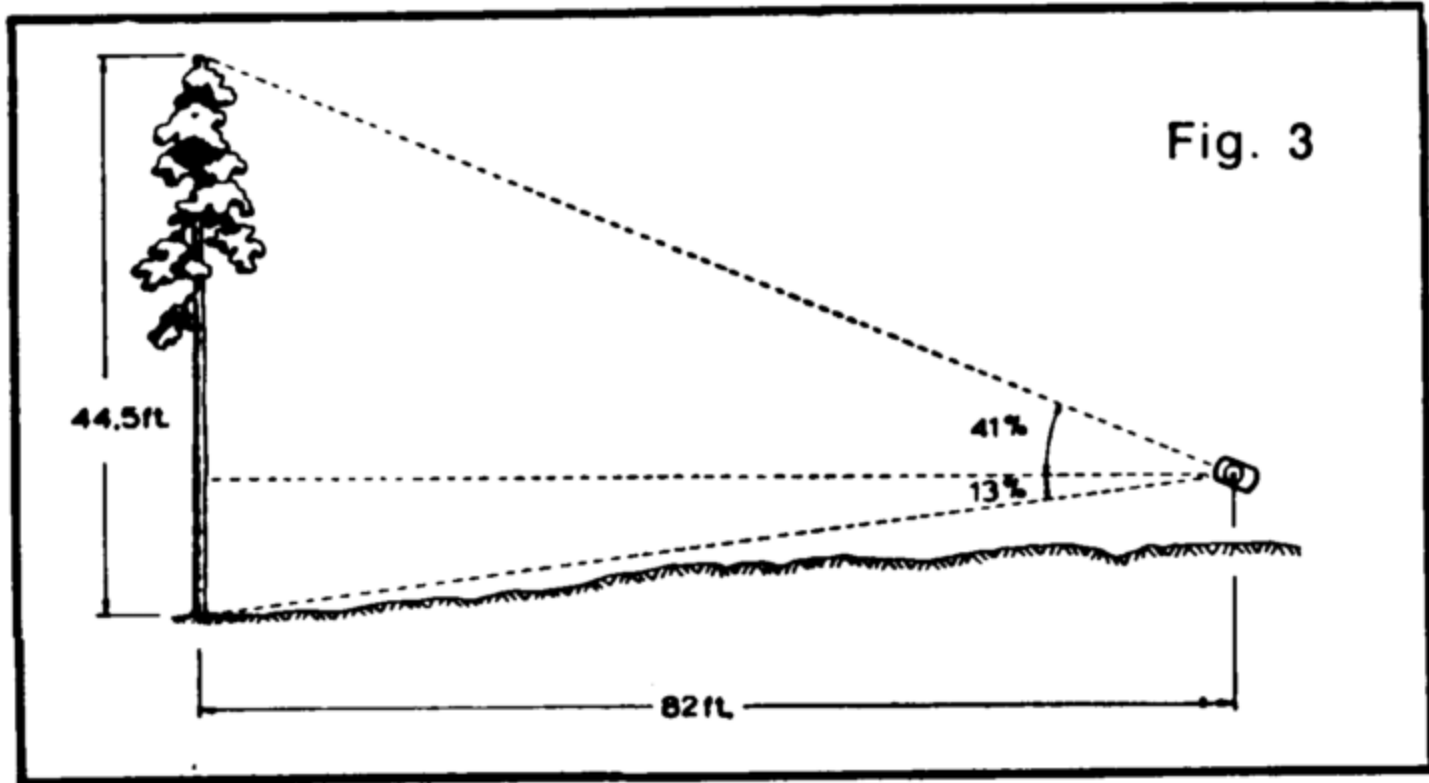


Fig. 1

Percentage Scale (cont.)

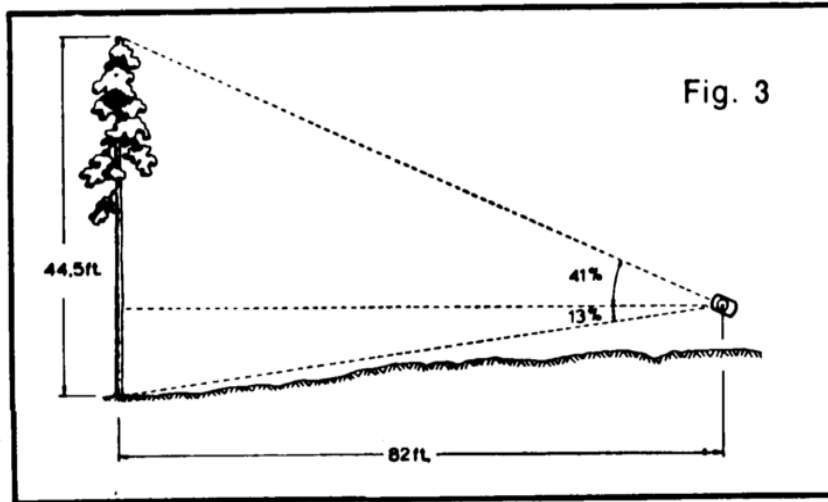


$$\text{height} = 0.41 * 82 \text{ ft} + 0.13 * 82 \text{ ft}$$
$$\text{height} = 44.3 \text{ ft}$$

Special considerations

Trunk base **below**

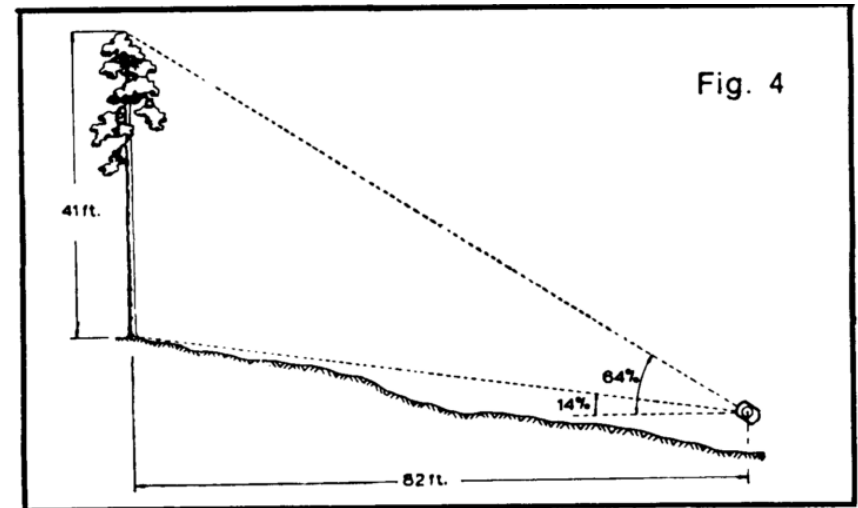
+



$$\text{height} = 0.41 * 82 \text{ ft} + 0.13 * 82 \text{ ft}$$
$$\text{height} = 44.3 \text{ ft}$$

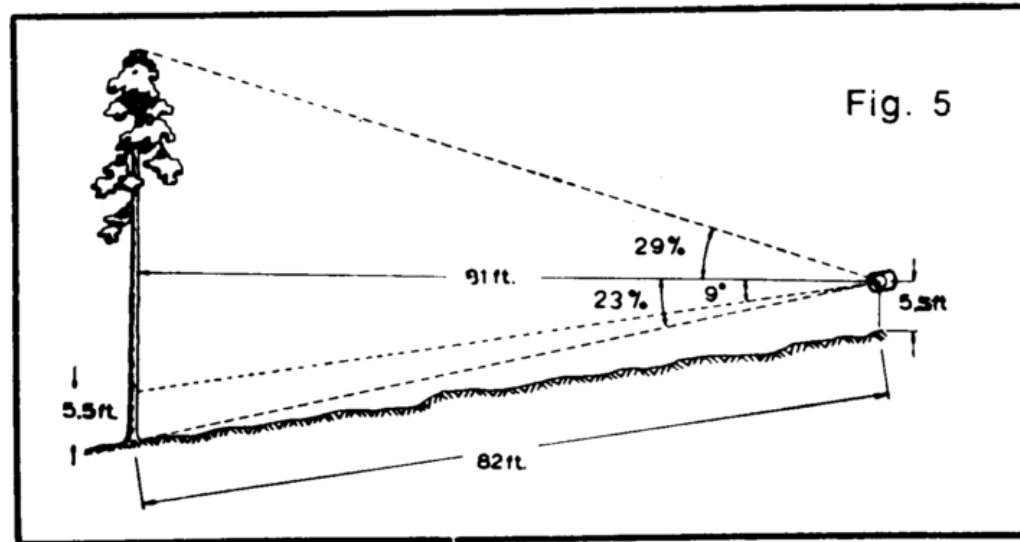
Trunk base **above**

-



$$\text{height} = 0.64 * 82 \text{ ft} - 0.14 * 82 \text{ ft}$$
$$\text{height} = 41 \text{ ft}$$

Special considerations (cont.)



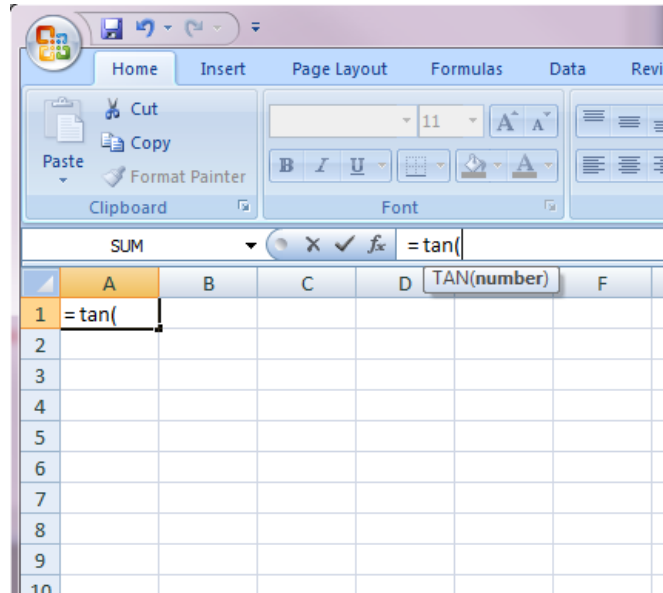
Calculations assume horizontal distance – you may measure slope distance

Correction: $H = h \times \cos \text{slope}$

$$\text{height} = (0.29 * 82 \text{ ft} + 0.23 * 82 \text{ ft}) * \cos 9^\circ$$

$$\text{height} = 42.11 \text{ ft}$$

Special considerations (cont.)



Many programs, such as Microsoft Excel, require radians instead of degrees for their trigonometry functions.

Degrees to Radians conversion: 1 degree = 0.0174532925 radians

The complete Suunto clinometer user guide is available on our class website

<http://ecosensing.org/teaching/css-560/digital-library/manuals/>