MINILAB ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━

2-2 Measuring Height Indirectly

Objective

During this investigation you will
• use trigonometry to measure your height indirectly.

Equipment

sturdy string or fishing line (about 3 meters long)
protractor
meter stick

Procedure

1. Hold one end of the string on top of your head.
2. Have your partner extend the string to the floor in front of you. This string is the hypotenuse of a triangle in which your body and the floor make up the other two sides.
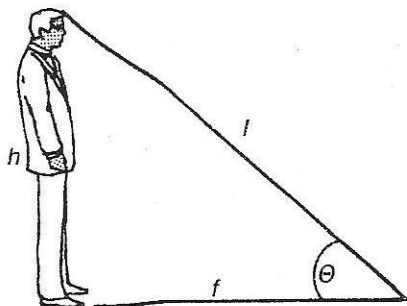
3. Measure the length of the string, *l*, the distance along the floor from your feet to the place where the string touches, *f*, and the angle between the string and the floor, θ. Record these values in the Data and Calculations section.
4. Measure your height directly by standing against the wall.
5. Repeat Steps 1-4 to determine your partner's height.

Data and Calculations

Length of string (*l*) ━━━━━━━━━━━━━━━━━━━━━━━━

Distance along the floor (*f*) ━━━━━━━━━━━━━━━━━━

Angle between floor and string (θ) ━━━━━━━━━━━━━━━━

Height measured directly ━━━━━━━━━━━━━━━━━━━━

Calculate your height by each of the methods indicated below. Be sure to indicate the equation you use in each case. Use the margins for your calculations.