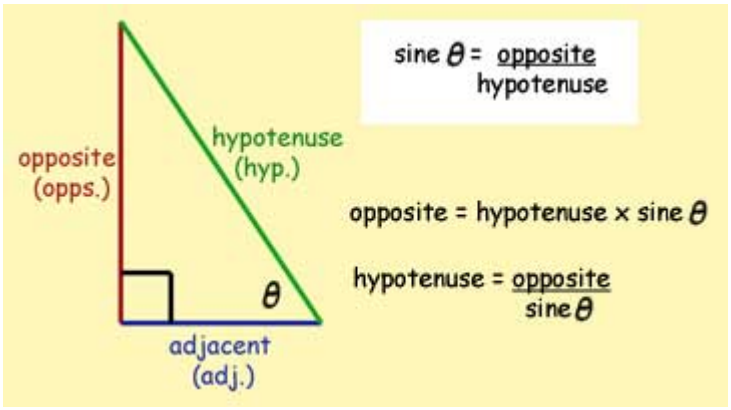
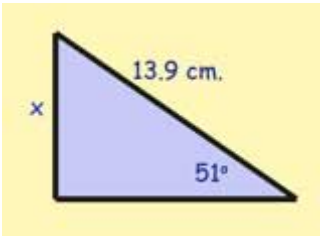
The Sine Ratio



Method for problems:

- write out the ratio putting in the values for the given sides and/or angle.
- put a '1' under the sine/cos/tan
- cross multiply(top left by bottom right = top right by bottom left)
- make the 'unknown' the subject of the equation

Example #1



$$\frac{\sin 51^\circ}{1} = \frac{x}{13.9}$$

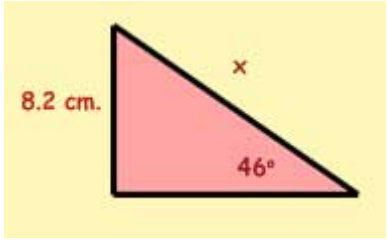
$$x = 13.9 \times \sin 51^\circ$$

$$= 13.9 \times 0.7771$$

$$= 10.8023$$

$$x = 10.80 \text{ cm } (2 \text{ d.p.})$$

Example #2



$$\frac{\sin 46^\circ}{1} = \frac{8.2}{x}$$

$$8.2 = x \times \sin 46^\circ$$

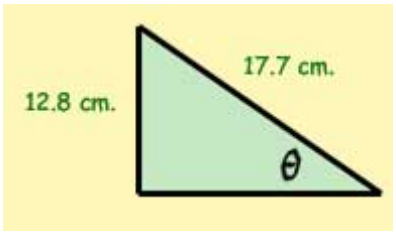
$$x = \frac{8.2}{\sin 46^\circ}$$

$$x = \frac{8.2}{0.7193}$$

$$= 11.3999$$

$$\underline{x = 11.40 \text{ cm}} \text{ (2 d.p.)}$$

Example #3



$$\sin\theta = \frac{12.8}{17.7}$$

$$= 0.7232$$

$$\theta = 46.3193^\circ$$

$$= \underline{46.32^\circ}$$