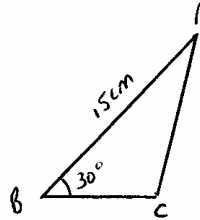
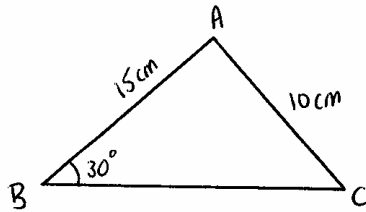


Finding Two Solutions for a Missing Angle

In general if $x = y^\circ$ then x is also equal to $180 - y^\circ$

This is because sometimes you can draw a triangle in 2 different ways.

Example 1. Given triangle ABC, where $\angle ABC = 30^\circ$, $AB = 15\text{cm}$ and $BC = 10\text{cm}$



$$\frac{\sin A}{a} = \frac{\sin B}{b}$$

$$\frac{\sin x}{15} = \frac{\sin 30^\circ}{10}$$

$$\sin x = \frac{\sin 30^\circ}{10} \times 15$$

$$\sin x = 0.75$$

$$x = 48.6^\circ$$

$$\text{Also as } x = 180 - y^\circ \quad x = 180 - 48.6$$

$$x = 131.4^\circ$$

so two solutions are 48.6° and 131.4°

Note: This only occurs if the angle you are finding is larger than the angle given.