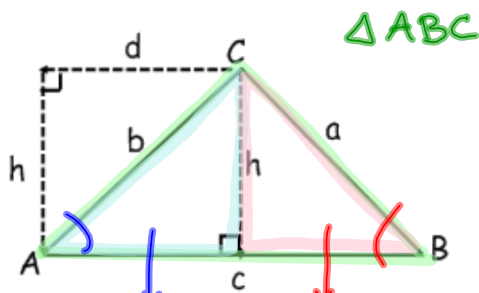


THE LAW OF SINES

USE FOR ASA OR AAS (SAA)
OR
SSA (A\$\$)

DERIVE THE LAW OF SINES



$$\sin A = \frac{h}{b}$$

$$b \cdot \sin A = h$$

$$\sin B = \frac{h}{a}$$

$$a \cdot \sin B = h$$

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

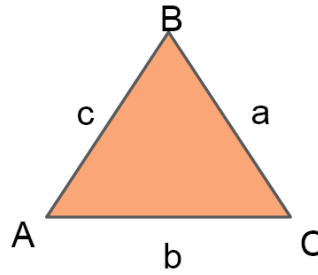
$$\frac{\sin A}{a} = \frac{\sin B}{b}$$

OR

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

★ Use L.O.S. when given an angle and its opposite side.

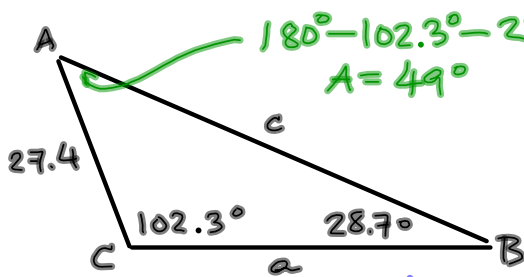
THE LAW OF SINES



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



EX.1: SOLVE THE TRIANGLE WITH
 $C = 102.3^\circ$, $B = 28.7^\circ$ AND $b = 27.4$ ft.



$180^\circ - 102.3^\circ - 28.7^\circ$
 $A = 49^\circ$

$$\frac{a}{\sin 49^\circ} = \frac{27.4}{\sin 28.7^\circ}$$

$$a = \frac{27.4 \sin(49^\circ)}{\sin(28.7^\circ)}$$

$$\frac{c}{\sin 102.3^\circ} = \frac{27.4}{\sin 28.7^\circ}$$

$$c = \frac{27.4 \sin(102.3^\circ)}{\sin(28.7^\circ)}$$

$A = 49^\circ$ $a = 43.1$
 $B = 28.7^\circ$ $b = 27.4$
 $C = 102.3^\circ$ $c = 55.7$

