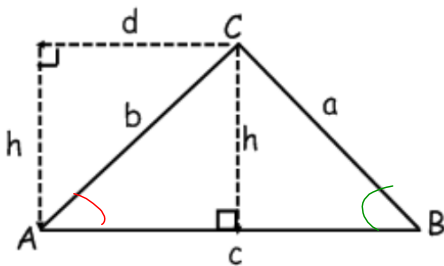


THE LAW OF SINES

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

DERIVE THE LAW OF SINES



$$\textcircled{3} \frac{b \sin A = a \sin B}{\sin A \sin B \quad \sin A \sin B}$$

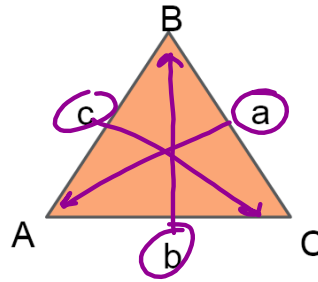
$$\frac{b}{\sin B} = \frac{a}{\sin A}$$

$$\textcircled{1} b \sin A = \frac{h}{b} \cdot b \quad \textcircled{2} a \sin B = \frac{h}{a} \cdot a$$

$$b \sin A = h \quad a \sin B = h$$



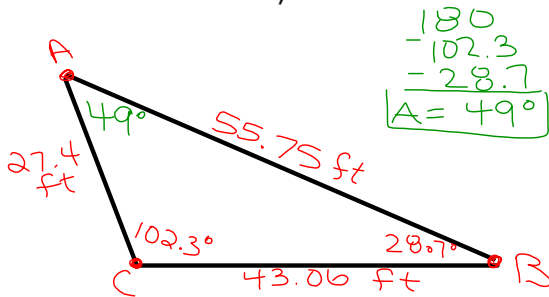
THE LAW OF SINES



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



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



$$\begin{array}{r} 180 \\ -102.3 \\ -28.7 \\ \hline A = 49^\circ \end{array}$$

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

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

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

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

$$c = 55.75 \text{ ft}$$

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

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

$$a \sin 28.7^\circ = 27.4 \sin 49^\circ$$

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

$$a = 43.06 \text{ ft}$$

