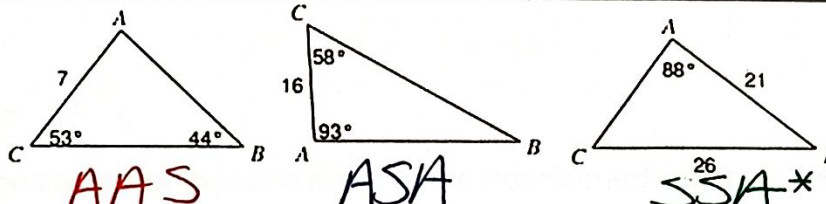
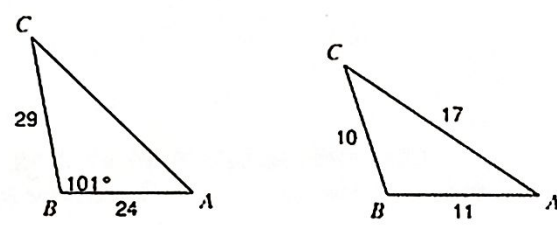


## 6.2 Law of Cosines Notes

### Law of Cosines

-used to solve oblique triangles when Law of Sines will not work.

Use...	when given...
Law of Sines	
Law of Cosines	

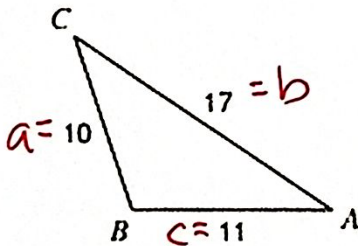
Law of Cosines Formula *sides containing*  $\leftarrow$  *this angle*  $\leftarrow$

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$b^2 = a^2 + c^2 - 2ac \cos B$$

$$c^2 = a^2 + b^2 - 2ab \cos C$$

Ex 1: Find the  $m\angle A$ .



$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$10^2 = 17^2 + 11^2 - 2(17)(11) \cos A$$

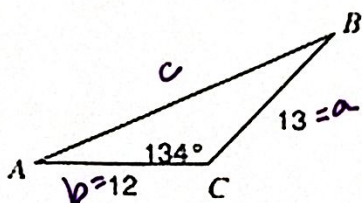
$$100 = 289 + 121 - 374 \cos A$$

$$100 = 410 - 374 \cos A$$

$$\begin{array}{r} -410 \\ -410 \\ \hline -310 = -374 \cos A \\ \hline -374 \end{array}$$

$$\begin{array}{r} \cos^{-1} \\ .829 = \cos A \\ \hline A = 34^\circ \end{array}$$

Ex 2: Find AB.



$$c^2 = a^2 + b^2 - 2ab \cos C$$

$$c^2 = 13^2 + 12^2 - 2(13)(12) \cos 134$$

$$\sqrt{c^2} = \sqrt{529.73}$$

$$c = 23$$