Law of Sines

More oblique triangles

It's as simple as this

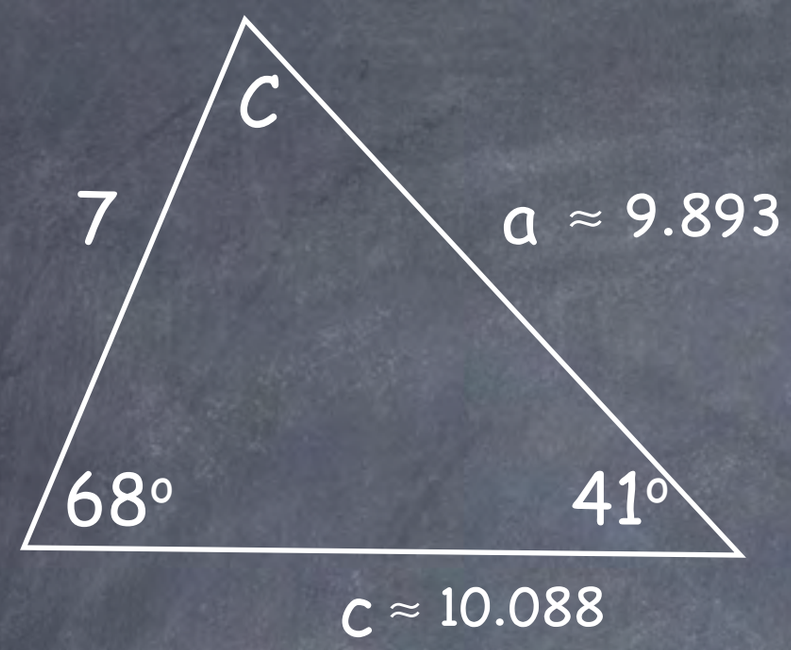
<u>Law of Sines</u>

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

One other formula that comes with this law will be useful in finding the area of a triangle

$$Area = \frac{1}{2} ab \sin C \qquad Area = \frac{1}{2} bc \sin A$$

$$Area = \frac{1}{2} ac \sin B$$



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

$$\frac{\sin 68^\circ}{a} = \underbrace{\frac{\sin 41^\circ}{7} = \frac{\sin \boxed{71^\circ}}{c}}$$

use supplementary angles to find this

$$\frac{\sin 41^\circ}{7} = \frac{\sin 71^\circ}{c}$$

cross-multiply

$$\frac{7 \sin 71^\circ}{\sin 41^\circ} = \frac{c \cancel{\sin 41^\circ}}{\cancel{\sin 41^\circ}}$$

$$\frac{7 \sin 71^\circ}{\sin 41^\circ} = c \approx 10.088$$

$$\frac{\sin 68^\circ}{a} = \frac{\sin 41^\circ}{7}$$

cross-multiply again

$$7 \sin 68^\circ = a \sin 41^\circ$$

$$\frac{7 \sin 68^\circ}{\sin 41^\circ} = a \approx 9.893$$