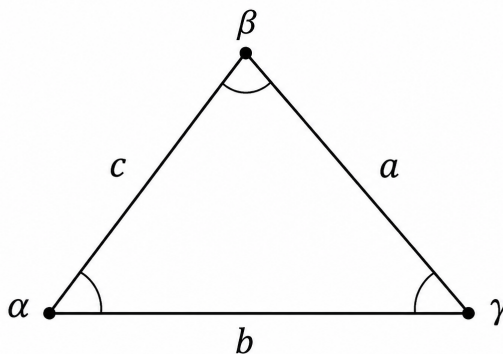
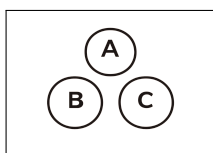


44

Laws of Triangles Law of Sines

A



Opposite $\alpha \rightarrow$ side a
Opposite $\beta \rightarrow$ side b
Opposite $\gamma \rightarrow$ side c

$$b = 7$$

$$c = 5$$

$$\alpha = 60^\circ$$

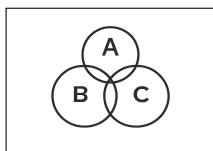
$$a^2 = 7^2 + 5^2 - 2(7)(5) \cos(60^\circ)$$

$$a^2 = 49 + 25 - 70(1/2)$$

$$a^2 = 74 - 35$$

$$a^2 = 39$$

$$a = \sqrt{39}$$



$$a^2 = b^2 + c^2 - 2bc \cos(\alpha)$$

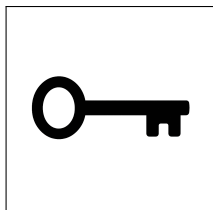
$$b = 10$$

$$c = 8$$

$$\alpha = 120^\circ$$

$$a = ?$$





$$b = 10$$

$$c = 8$$

$$\alpha = 120^\circ$$

$$a^2 = b^2 + c^2 - 2bc \cos(\alpha)$$

$$a^2 = 10^2 + 8^2 - 2(10)(8)(-1/2)$$

$$a^2 = 100 + 64 + 80$$

$$a^2 = 244$$

$$a = \sqrt{244} = 2\sqrt{61}$$