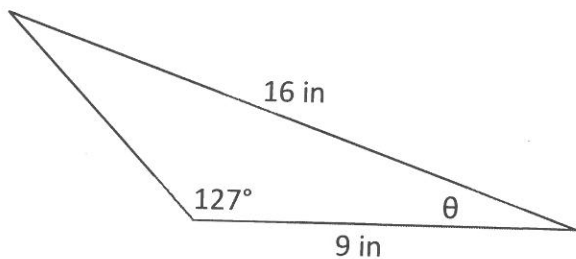


Example 7

Determine the size of the angle labelled θ .



We have a set a partners given (16 in and 127°), so this is a sine law question. The problem is: the other given side is partnered with the wrong angle! There is nothing you can do in this type of question; you have to go ahead and find the incorrect angle (we'll call that other angle α):

$$\frac{16}{\sin 127^\circ} = \frac{9}{\sin \alpha}$$

$$\sin \alpha = 9 \times \sin 127^\circ \div 16$$

$$\sin \alpha = 0.449232474 \dots$$

$$\alpha = 26.69^\circ$$

Now that we have found α (the 'top' angle in the diagram above – the partner to the 9 in side), we can use the 180° rule to find the angle that we are looking for (θ):

$$\theta = 180^\circ - 127^\circ - 26.69^\circ = \mathbf{26.31^\circ}$$