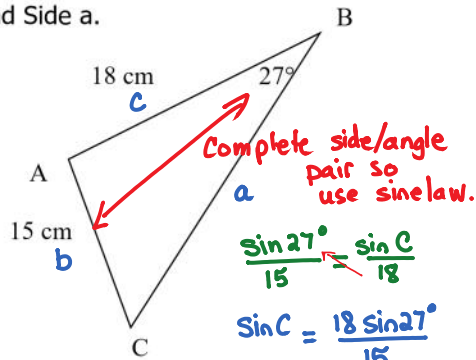


MAP 4CI : Review

2) Find Side a.



Complete side/angle pair so use sinelaw.

$$\frac{\sin 27^\circ}{15} = \frac{\sin C}{18}$$

$$\sin C = \frac{18 \sin 27^\circ}{15}$$

$$\sin C \doteq 0.54788\dots$$

$$C \doteq \sin^{-1}(0.54788\dots)$$

$$C \doteq 33.0^\circ \quad \text{so, } A = 180^\circ - 27^\circ - 33^\circ$$

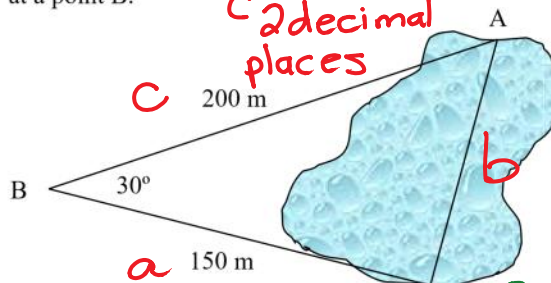
then use sine law or cosine law to solve for side a.

$$\frac{a}{\sin 120^\circ} = \frac{15}{\sin 27^\circ}$$

$$a = 15 \div \sin 27^\circ \times \sin 120^\circ$$

$$a \doteq 28.6 \text{ cm}$$

3) Find the width, to the nearest hundredth, of a small lake if the lengths 200 m and 150 m contain an angle of 30° at a point B.



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

$$b^2 = 150^2 + 200^2 - 150(200)\cos 30^\circ$$

$$\sqrt{b^2} = \sqrt{10538.47577}$$

$$b \doteq 102.66$$

\therefore the width is 102.66 m.

Answers:

1. a. 66° , b. 11.0cm

2. 28.6 cm

3. 102.66m