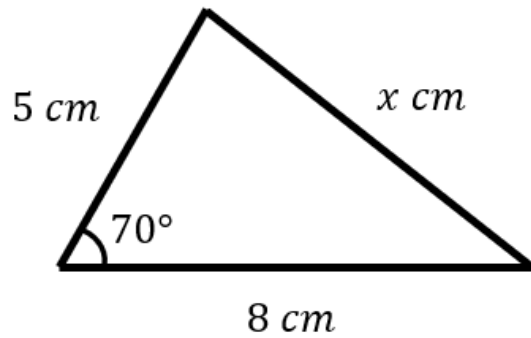


## 9.1) The cosine rule

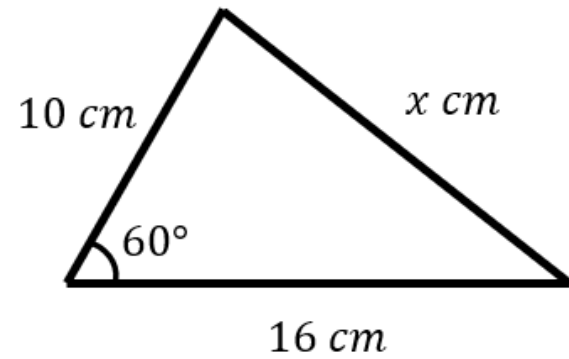
## Worked example

Find the value of  $x$



## Your turn

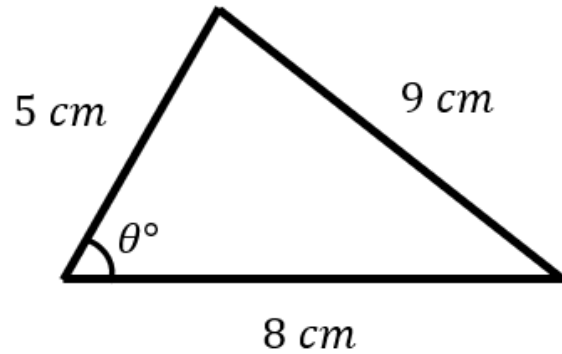
Find the value of  $x$



$$x = 14$$

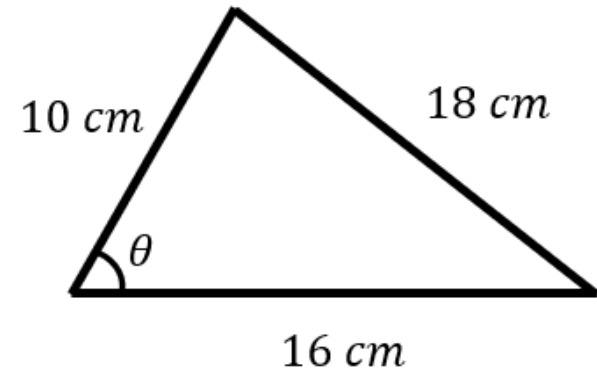
## Worked example

Find the value of  $\theta$



## Your turn

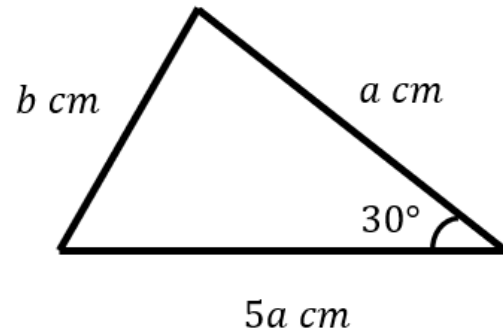
Find the value of  $\theta$



$$\theta = 84.26^\circ \text{ (2 dp)}$$

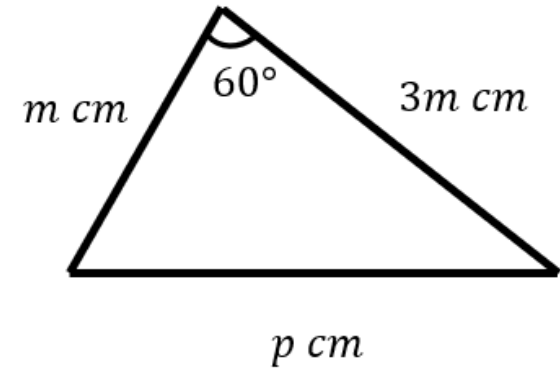
## Worked example

Express  $b$  in terms of  $a$



## Your turn

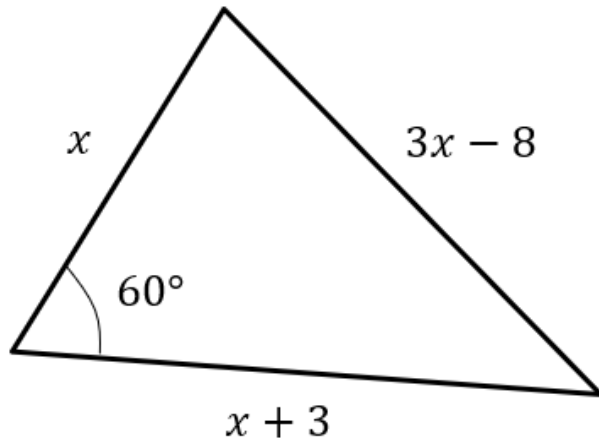
Express  $p$  in terms of  $m$



$$p = m\sqrt{7}$$

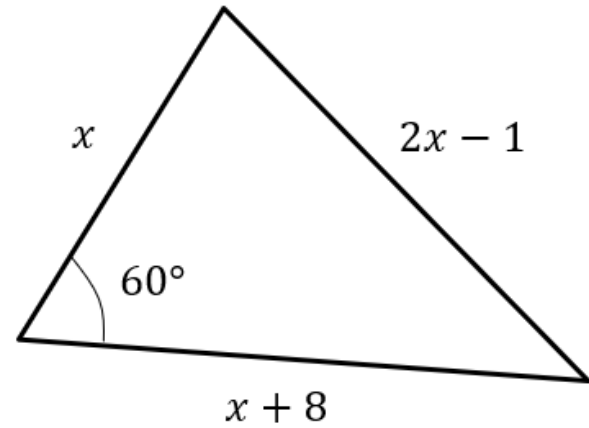
## Worked example

Determine the value of  $x$



## Your turn

Determine the value of  $x$



$$x = 7$$

## Worked example

Find the size of the smallest angle in a triangle whose sides have lengths  $6\text{ cm}$ ,  $10\text{ cm}$  and  $12\text{ cm}$

## Your turn

Find the size of the smallest angle in a triangle whose sides have lengths  $3\text{ cm}$ ,  $5\text{ cm}$  and  $6\text{ cm}$

$29.9^\circ$  (3 sf)

## Worked example

Coastguard station  $B$  is 16 km, on a bearing of  $030^\circ$ , from coastguard station  $A$ .  
A ship  $C$  is 8.4 km on a bearing of  $081^\circ$ , away from  $A$ .  
Calculate how far  $C$  is from  $B$ .

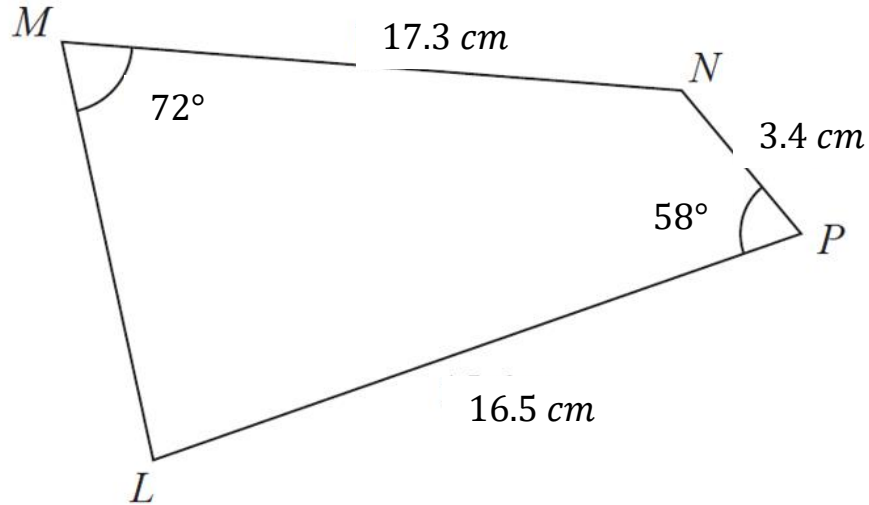
## Your turn

Coastguard station  $B$  is 8 km, on a bearing of  $060^\circ$ , from coastguard station  $A$ .  
A ship  $C$  is 4.8 km on a bearing of  $018^\circ$ , away from  $A$ .  
Calculate how far  $C$  is from  $B$ .

**5.47 km (3 sf)**

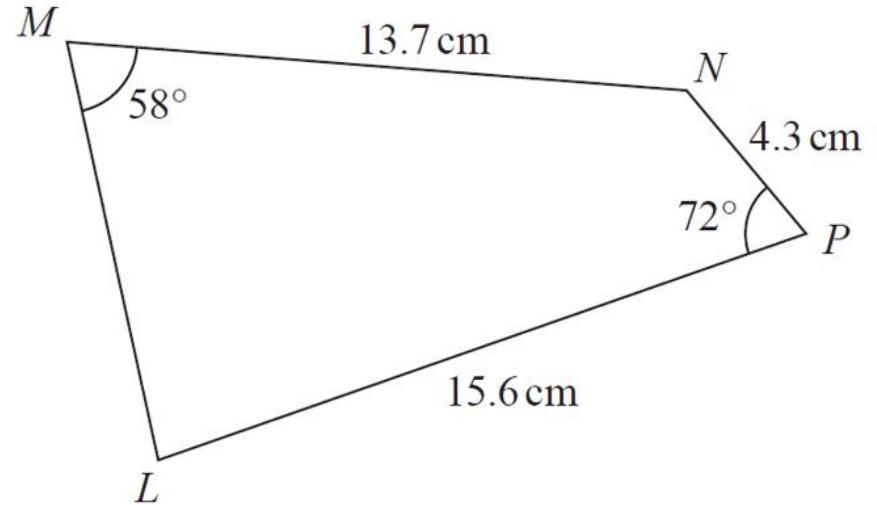
## Worked example

Calculate the size of angle  $MLP$



## Your turn

Calculate the size of angle  $MLP$



$67.49^\circ$  (2 dp)