Problem solving with sin/cos rule

Example

The diagram shows the locations of four mobile phone masts in a field, . , angle and angle .

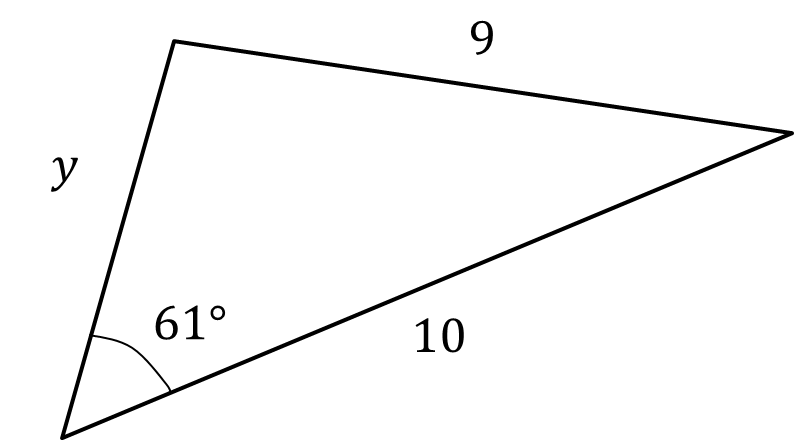
In order that the masts do not interfere with each other, they must be at least 70m apart.

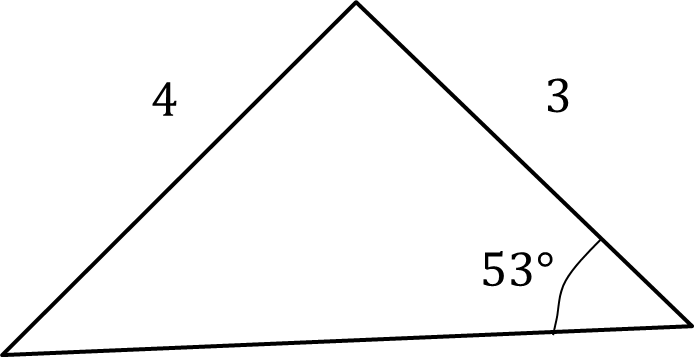
Given that is the minimum distance from , find:

1. The distance is from
2. The angle
3. The area enclosed by the four masts.

Using the sine rule twice:

Test your understanding



1. 

Extension

1. [AEA 2009 Q5a] The sides of the triangle have lengths and , where . The sizes of the angles and form an arithmetic sequence.
2. Show that the area of triangle is .

Given that and , find

(ii) the value of ,

(iii) the value of .

Ex 9E Pg 189