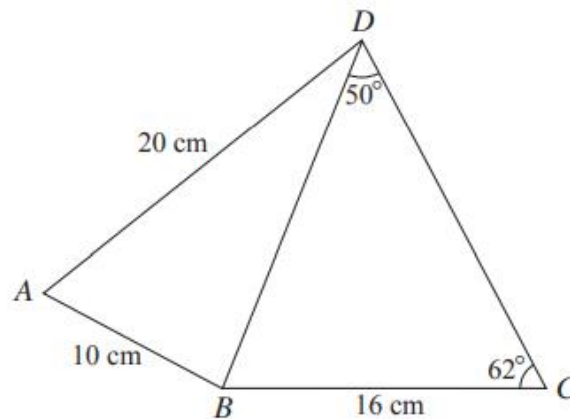


Sine and Cosine Rules and Area of a Triangle (From OCR 4722)

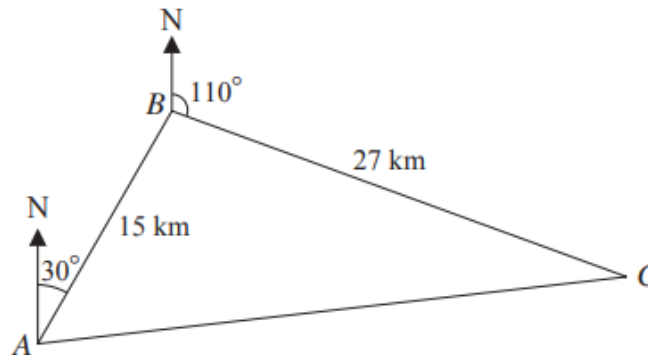
Q1, (Jan 2008, Q4)



In the diagram, angle $BDC = 50^\circ$ and angle $BCD = 62^\circ$. It is given that $AB = 10$ cm, $AD = 20$ cm and $BC = 16$ cm.

- (i) Find the length of BD . [2]
- (ii) Find angle BAD . [3]

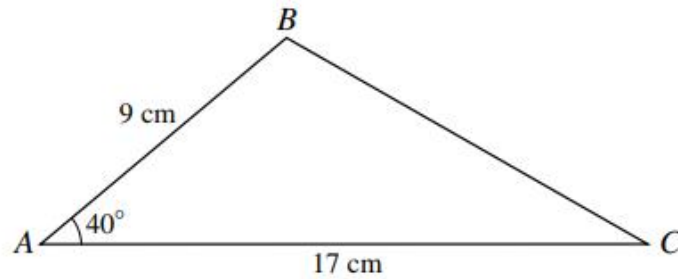
Q2, (Jun 2008, Q6)



In the diagram, a lifeboat station is at point A . A distress call is received and the lifeboat travels 15 km on a bearing of 030° to point B . A second call is received and the lifeboat then travels 27 km on a bearing of 110° to arrive at point C . The lifeboat then travels back to the station at A .

- (i) Show that angle ABC is 100° . [1]
- (ii) Find the distance that the lifeboat has to travel to get from C back to A . [2]
- (iii) Find the bearing on which the lifeboat has to travel to get from C to A . [4]

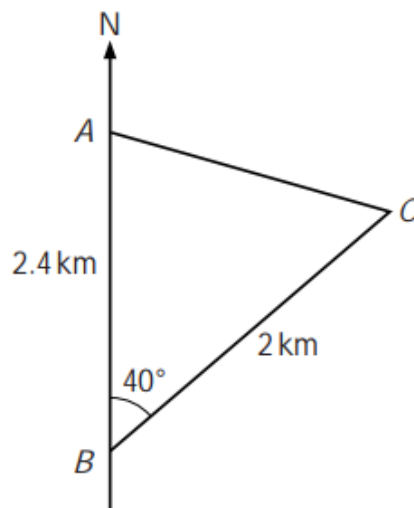
Q3, (Jun 2011, Q1)



The diagram shows triangle ABC , with $AB = 9$ cm, $AC = 17$ cm and angle $BAC = 40^\circ$.

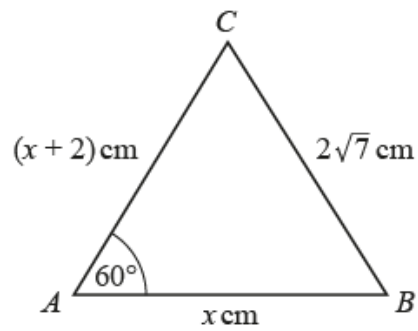
- (i) Find the length of BC . [2]
 - (ii) Find the area of triangle ABC . [2]
 - (iii) D is the point on AC such that angle $BDA = 63^\circ$. Find the length of BD . [3]
-

Q4, (Jan 2012, Q4)



The diagram shows two points A and B on a straight coastline, with A being 2.4 km due north of B . A stationary ship is at point C , on a bearing of 040° and at a distance of 2 km from B .

- (i) Find the distance AC , giving your answer correct to 3 significant figures. [2]
 - (ii) Find the bearing of C from A . [3]
 - (iii) Find the shortest distance from the ship to the coastline. [2]
-



The diagram shows triangle ABC , with $AB = x$ cm, $AC = (x + 2)$ cm, $BC = 2\sqrt{7}$ cm and angle $CAB = 60^\circ$.

(i) Find the value of x . [4]

(ii) Find the area of triangle ABC , giving your answer in an exact form as simply as possible. [2]
