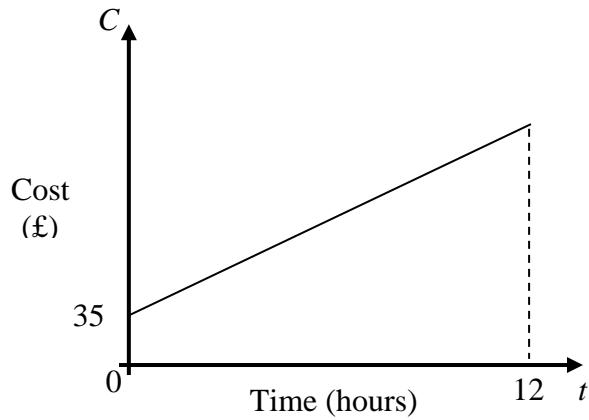


Practice National 5 Unit 2 Extension
Test

1. A plumber charges £35 as a call out fee and then £20 per hour for labour.

The graph shows how the cost of hiring the plumber changes with time.



Find the equation of the straight line in terms of C and T .

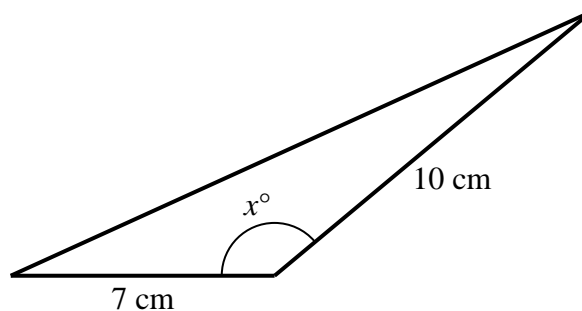
(4)

2. Expand and simplify

$$(8x - 2)(6x^2 - 4x - 5).$$

(3)

3. The triangle shown has an area of 20 square centimetres.



Calculate the size of the angle marked x .

(4)

4. A formula is given by $Q = \frac{7\pi r^2}{5}$.
Change the subject of the formula to r . (3)

5. Write $x^2 - 14x + 15$ in the form $(x - a)^2 + b$, stating the values of a and b . (3)

6.

Mr Smith and Mrs Curran both shop at the same store.

- (a) Mr Smith bought 3 loaves and 2 packets of butter. The total cost was £4.73.

Let x pounds be the cost of a loaf and y pounds be the cost of a packet of butter.

Write down an equation in x and y which satisfies the above condition.

- (b) Mrs Curran bought 5 loaves and 3 packets of butter. The total cost was £7.52.

Write down a second equation in x and y which satisfies this condition.

- (c) Use the equations in parts (a) and (b) to find the cost of a loaf and the cost of a packet of butter.

4

7. Factorise:-

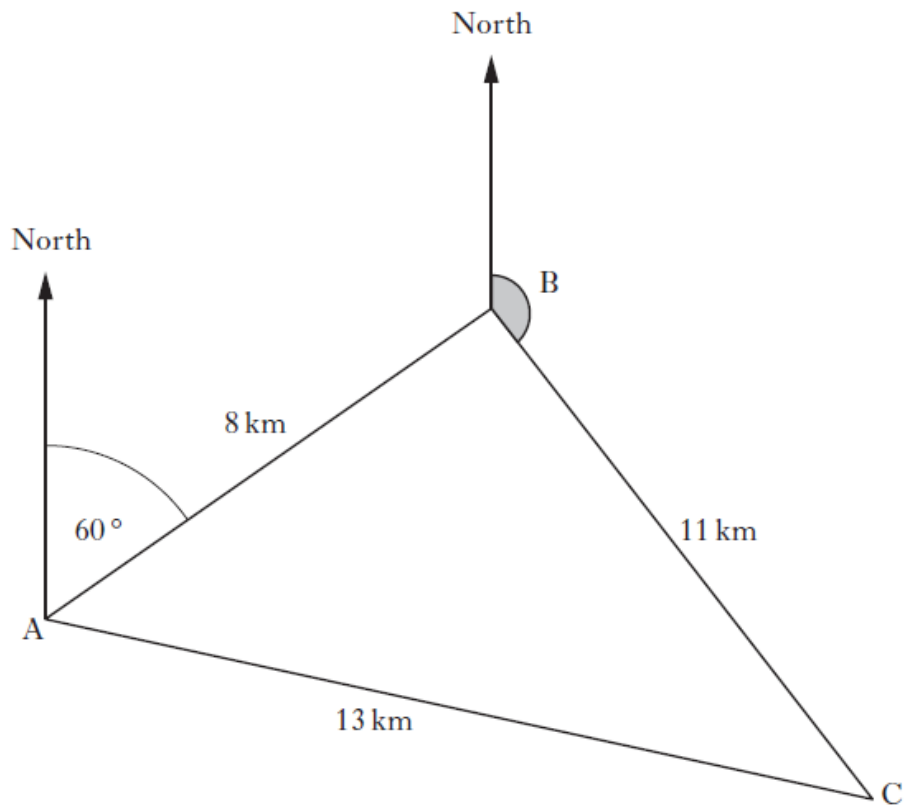
(a) $x^2 - 121$

(b) $5x^2 - 17x + 6$

(3)

8.

In a race, boats sail round three buoys represented by A, B and C in the diagram below.



B is 8 kilometres from A on a bearing of 060° .

C is 11 kilometres from B.

A is 13 kilometres from C.

(a) Calculate the size of angle ABC.

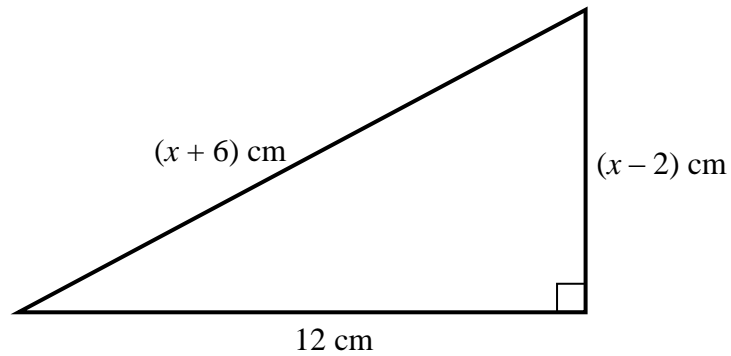
3

(b) Hence find the size of the shaded angle.

2

9.

A right-angled triangle has sides as shown.

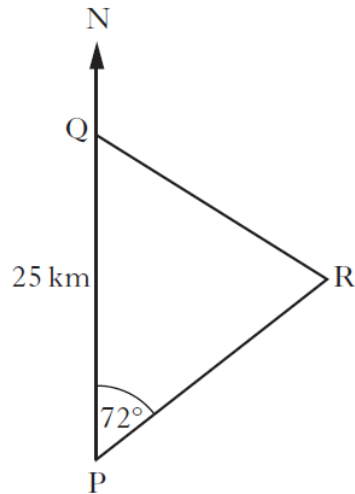


Calculate the value of x .

(3)

10.

In the diagram below P, Q and R represent the positions of Portlee, Queenstown and Rushton respectively.



Portlee is 25 kilometres due South of Queenstown.

From Portlee, the bearing of Rushton is 072° .

From Queenstown, the bearing of Rushton is 128° .

Calculate the distance between Portlee and Rushton.

Do not use a scale drawing.

4

[End of question paper]

