

- 1 The following rule is used to work out the total cost, in euros, of hiring a room.

Total cost = 9 euros for each hour plus 20 euros

The total cost of hiring the room for n hours is T euros.

- (c) Write down a formula for T in terms of n .

$$T = 9n + 20 \quad (2)$$

$$T = 9n + 20$$

(2)

(Total for Question 1 is 2 marks)

There are 6 eggs in a small box of eggs.
There are 12 eggs in a large box of eggs.

Alex buys g small boxes of eggs and h large boxes of eggs.
He buys a total of T eggs.

2 (c) Write down a formula for T in terms of g and h .

Alex buys :

small eggs : $6g$

large eggs : $12h$

Total, $T = 6g + 12h$ (3)

$$T = 6g + 12h$$

(3)

(Total for Question 2 is 3 marks)

3 The diagram shows a shape.

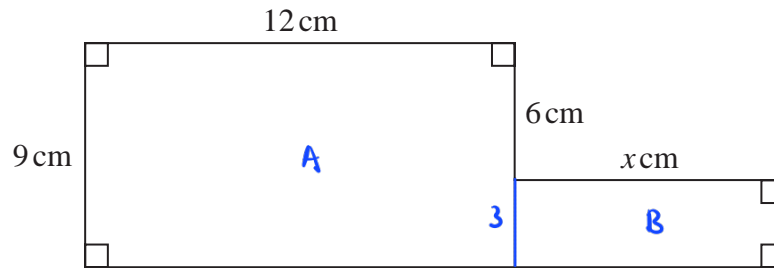


Diagram **NOT**
accurately drawn

The shape has area 129 cm^2

Work out the value of x .

Total Area : Area of shape A + Area of shape B

$$129 = (12 \times 9) + 3x \quad (1)$$

$$129 = 108 + 3x \quad (1)$$

$$3x = 129 - 108$$

$$3x = 21$$

$$x = \frac{21}{3} \quad (1)$$

$$= 7 \quad (1)$$

$$x = 7$$

(Total for Question 3 is 4 marks)

Sergio buys m boxes of seeds and n packets of seeds.

Each box contains 10 seeds.

Each packet contains 6 seeds.

The total number of seeds that Sergio buys is T .

4 (d) Write down a formula for T in terms of m and n .

$$\text{Box} = 10 \times m = 10m$$

$$\text{Packet} = 6 \times n = 6n$$

$$\text{Total, } T = 10m + 6n$$

$$T = 10m + 6n$$

3

(3)

(Total for Question 4 is 3 marks)

- 5 (d) Use Francesco's rule to write down a formula for the time, T minutes, to cook a chicken of weight k kilograms.

$$T = 40k + 15$$

$$T = 40k + 15 \quad (2)$$

(2)

(Total for Question 5 is 2 marks)

When the input is n , the output is P .

6 (c) Find a formula for P in terms of n .

$$p = \frac{(n \times 3 + 5)}{2}$$

$$p = \frac{3n + 5}{2} \quad (2)$$

$$p = \frac{3n + 5}{2}$$

(2)

(Total for Question 6 is 2 marks)

- 7 Molly uses this number machine to work out the amount of tax that she has to pay on the money she earns.



When Molly works n hours the amount of tax she has to pay is £ T

Find a formula for T in terms of n

n = number of hours worked

T = tax to be paid

$$(n \times 12 + 50) \times 0.2 = T$$

$$(12n + 50) \times 0.2 = T$$

$$T = 0.2 \times 12n + 0.2 \times 50$$

$$T = 2.4n + 10 \quad \textcircled{3}$$

$$T = 2.4n + 10$$

(Total for Question 7 is 3 marks)

Rosanna sells m small bags of marbles and p large bags of marbles.

Each small bag contains 15 marbles.

Each large bag contains 40 marbles.

The total number of marbles that Rosanna sells is T

8 (e) Write down a formula for T in terms of m and p

$$\text{small} : 15m$$

$$\text{large} : 40p$$

$$\text{Total, } T = 15m + 40p$$

$$T = 15m + 40p \quad (3)$$

(3)

(Total for Question 8 is 3 marks)

There are 200 bolts in each box of bolts.

Samira buys c boxes of bolts.

Samira uses the bolts she bought to fill packets of bolts.

There are 50 bolts in each packet of bolts.

Samira sells d packets of bolts.

The total number of bolts Samira has left is T

9 (b) Write down a formula for T in terms of c and d

$$T = 200c - 50d$$

$$T = 200c - 50d$$

(3)

3

(Total for Question 9 is 3 marks)

10

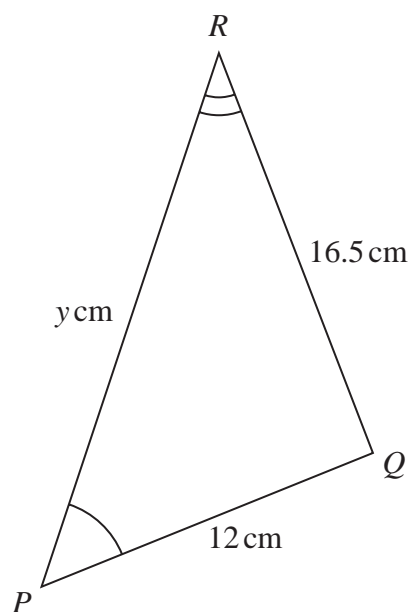
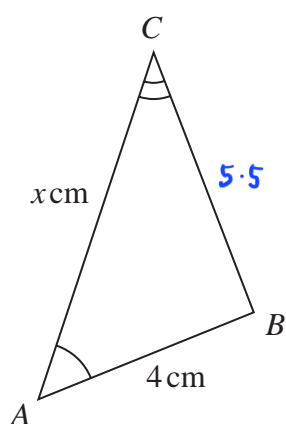


Diagram **NOT**
accurately drawn

(b) Write down an expression for y in terms of x

$$y = 3x$$

$$y = \frac{3x}{1}$$

(Total for Question 10 is 1 marks)

- 11** A small bag of grain contains 2 kg of grain.
A large sack of grain contains 7 kg of grain.

Makenna buys r small bags of grain and h large sacks of grain.

The total amount of grain Makenna buys is F kg.

Write down a formula for F in terms of r and h

$$F = 2r + 7h$$

$$F = 2r + 7h \quad (3)$$

(Total for Question 11 is 3 marks)
