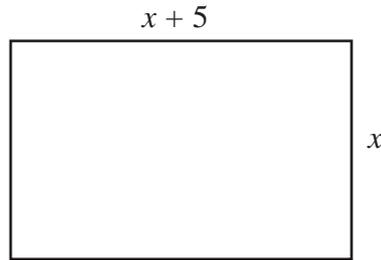


Forming Formulae and Equations

- 1) The width of a rectangle is x centimetres.
The length of the rectangle is $(x + 5)$ centimetres.



- a) Find an expression, in terms of x , for the perimeter of the rectangle.
Give your answer in its simplest form.

The perimeter of the rectangle is 38 centimetres.

- b) Work out the length of the rectangle.



2)

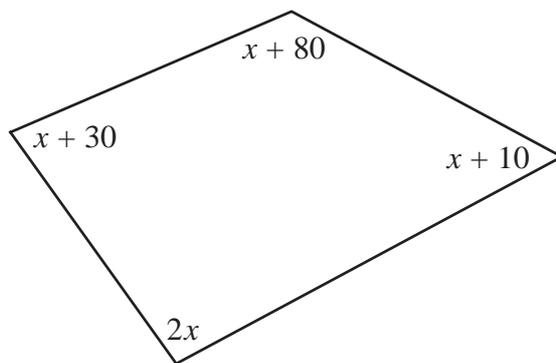


Diagram NOT accurately drawn

The sizes of the angles, in degrees, of the quadrilateral are

$x + 10$
 $2x$
 $x + 80$
 $x + 30$

- a) Use this information to write down an equation in terms of x .
b) Use your answer to part (a) to work out the size of the smallest angle of the quadrilateral.



3) Sarah buys 6 cups and 6 mugs

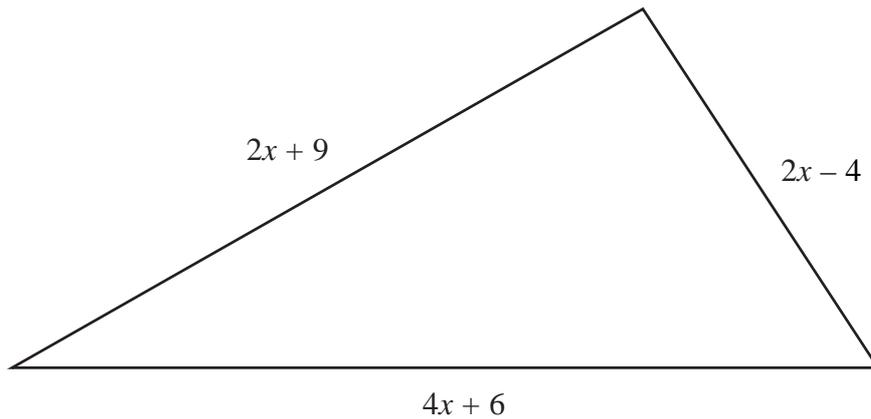
A cup costs $\text{£}x$

A mug costs $\text{£}(x + 3)$

- a) Write down an expression, in terms of x , for the total cost, in pounds, of 6 cups and 6 mugs.
b) If the total cost of 6 cups and 6 mugs is $\text{£}48$, write an equation in terms of x .
c) Solve your equation to find the cost of a cup and the cost of a mug.

Forming Formulae and Equations

1)



In the diagram, all measurements are in centimetres.

The lengths of the sides are

$$2x + 9$$

$$2x - 4$$

$$4x + 6$$

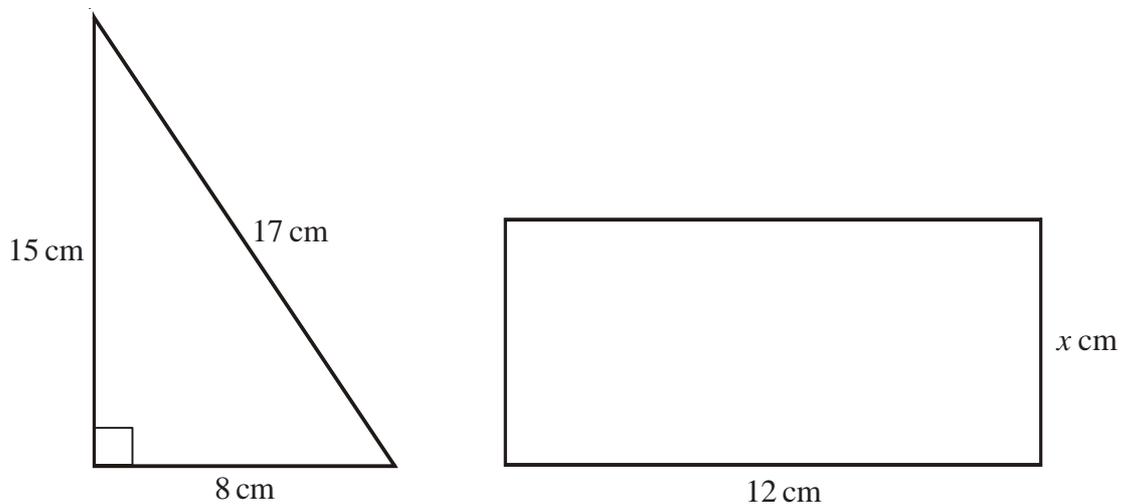
- a) Find an expression, in terms of x , for the perimeter of the triangle.
Give your expression in its simplest form.

The perimeter of the triangle is 39 cm.

- b) Find the value of x .



- 2) The diagram shows a right-angled triangle and a rectangle.



The area of the right-angled triangle is equal to the area of the rectangle.

Find the value of x .

Forming Formulae and Equations

- 1) A shop sells small boxes and large boxes for storing CDs.

A small box stores x CDs.

A large box stores y CDs.

Emma buys 8 small boxes and 5 large boxes.

Emma can store a total of T CDs in these boxes.

Write down a formula for T in terms of x and y .

- 2) Batteries are sold in packets and boxes.

Each packet contains 4 batteries.

Each box contains 20 batteries.

Tony buys p packets of batteries and b boxes of batteries.

Tony buys a total of N batteries.

Write down a formula for N in terms of p and b .

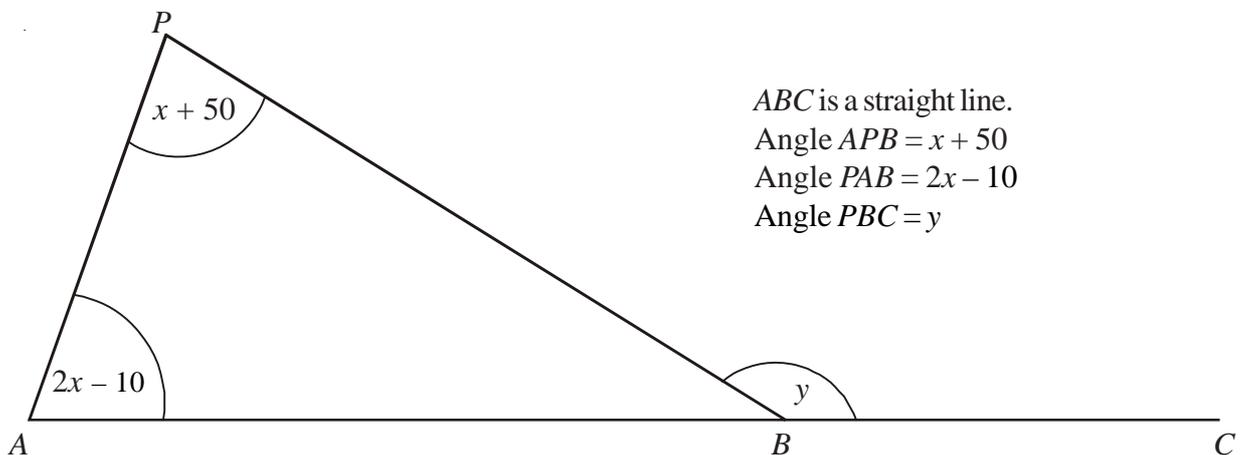
- 3) Compasses cost c pence each.

Rulers cost r pence each.

Write down an expression for the total cost, in pence, of 2 compasses and 4 rulers.



4)



- a) Show that $y = 3x + 40$
 Give reasons for each stage of your working.
- b) Given that y equals 145 degrees
- Work out the value of x .
 - Work out the size of the largest angle in triangle APB .