## mathsgenie.co.uk

1 The lengths, in cm, of the sides of a triangle are $3 x-5,2 x-1$ and $x+1$

(a) Write down an expression, in terms of $x$, for the perimeter of the triangle.

The perimeter of the triangle is 31 cm .
(b) Work out the value of $x$.
(Total for question 1 is 4 marks)
2 A rectangle has a length of $(2 x+3) \mathrm{cm}$ and a width of $(x+5) \mathrm{cm}$.

(a) Find an expression for the perimeter of the rectangle.
(b) Given the rectangle has a perimeter of 43 cm find the value of $x$.
(Total for question 2 is 4 marks)


Find the value of $x$.

4 The diagram shows a right angled triangle.

$4 x$
The area of the triangle is $294 \mathrm{~cm}^{2}$
Work out the value of $x$.
(Total for question 4 is 3 marks)

## mathsgenie.co.uk

5 The sizes of the angles, in degrees, of a triangle are $2 x+9, x+13$ and $x-8$


Work out the value of $x$.
(Total for question 5 is 3 marks)

6 The diagram shows a rectangle.
All measurements are in centimetres.


Find the perimeter of the rectangle.
(Total for question 6 is 3 marks)

7 The diagram shows a rectangle and a triangle.



The perimeter of the rectangle is equal to the perimeter of the triangle. Find the value of $x$.
(Total for question 7 is $\mathbf{3}$ marks)

8

$A B C D$ is a parallelogram
All measurements are in centimetres.
The perpendicular height of the parallelogram is 5 cm .
Find the area of $A B C D$

9 The diagram shows a right-angled triangle.
All of the angles are in degrees.


Find the value of size of the smallest angle in the triangle.
(Total for question 9 is 3 marks)
10 Adam has some marbles.
Bradley has twice as many marbles as Adam.
Chris has 5 more marbles than Bradley.
In total they have 55 marbles.
How many marbles does Chris have?
(Total for question 10 is 3 marks)

11 The size of the largest angle in a triangle is three times the size of the smallest angle.
The other angle is $35^{\circ}$ more than the smallest angle.
Work out, in degrees, the size of each angle in the triangle.
You must show your working.
(Total for question 11 is $\mathbf{5}$ marks)

12 Lucy is three times as old as Alex.
Lucy is 7 years older than Megan.
The sum of their ages is 126 .
Find the ratio of Alex's age to Lucy's age to Megan's age.
(Total for question 12 is $\mathbf{4}$ marks)

