

Form Simple Expressions: Exercise

1 Write an algebraic expression for the for the following statements:

a 5 more than x

d y less than 4

g 8 multiplied by x

j y shared between 3

m x less than y

p y shared by x

s x multiplied by x

v 9 lots of y squared

b x more than 5

e 8 lots of x

h 3 divided by x

k x more than y

n y less than x

q 7 lots of y , then subtract 1

t x lots of x

w y squared, then multiply by 9

c 4 less than y

f x lots of 8

i y divided by 3

l y more than x

o x lots of y

r x divided by 4, then add 2

u x squared

2 A cat costs $\pounds c$ and a dog $\pounds 2$ less than a cat.
What is the cost (in \pounds) of:

a 4 cats?

b 3 dogs?

3 The cost of a badger is b pence.
A racoon is 5 pence more expensive than a badger, and a beaver three times as expensive as a badger.

a What is the cost of a racoon?

b What is the cost of a beaver?

c What is the total cost of a badger, racoon and a beaver?

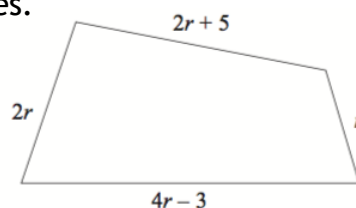
4 After tennis training, Andy collects twice as many balls as Roger. Maria collects 4 more than Andy.
If Roger collected r balls, in terms of r , how many balls did:

a Andy collect?

b Maria collect?

c They collect all together?

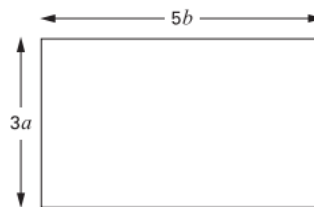
5 [Edexcel GCSE Nov2006-31 Q11a (Modified)]
In the diagram, all measurements are in centimetres.



a Find an expression, in terms of r , for the perimeter of the quadrilateral.
Give your expression in its simplest form.

b If the value of r is 3, what is the perimeter of the quadrilateral?

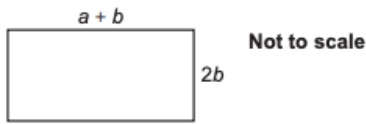
6 [KS3 SATs 2003 L6-L8 Paper 1 Q4aii (Modified)]
The diagram shows a rectangle.
Its dimensions are $3a$ by $5b$.



a Find an expression for the area of this rectangle.

b If $a = 2$ and $b = 3$, what is the area of this rectangle?

- 7 [OCR GCSE(9-1) June 2018 3F Q13ai]
In this question, assume all dimensions are in centimetres.
Jess and Pete have many rectangular tiles.
Each tile has length $a + b$ and width $2b$.



Jess joins three tiles together to make a larger rectangle, as shown.



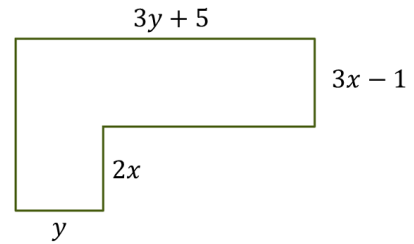
Write an expression for the perimeter of her rectangle.
Give your answer in its simplest form.

- 8 Pippa thinks of a number. She adds 1 to it to get a second number. She then adds 2 to the second number to get a third number, adds 3 to the third to get a fourth, and finally adds 4 to the fourth to get a fifth number.
If n is the number she started with, what is the sum of her numbers?

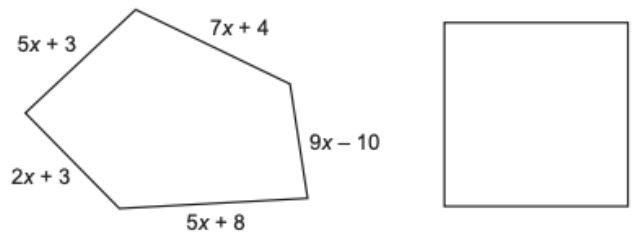
- 9 [Edexcel GCSE June 2003 1F Q21b, Edexcel GCSE June 2003 3I Q8b]
Lisa packs pencils in boxes.
She packs 12 pencils in each box.
Lisa packs x boxes of pencils.
Lisa also packs pens in boxes.
She packs 10 pens into each box.
Lisa packs y boxes of pens.
Write down an expression, in terms of x and y , for the total number of pens and pencils Lisa packs.

- 10 There is a queue of n people. If there are q people in front of me, how many people are behind me?

- 11 The shape shown is made from two rectangles.
All the lengths are in cm.
Write an expression for the perimeter of the shape.
Simplify your expression.



- 12 [OCR GCSE(9-1) Nov 2018 1F Q16]
The perimeter of the pentagon is equal to the perimeter of the square.
Find an expression for the length of one side of the square.
Give your answer in terms of x in its simplest form.



- [JMC 2014 Q20]
Box P has p chocolates and box Q has q chocolates, where p and q are both odd and $p > q$. What is the smallest number of chocolates which would have to be moved from P to box Q so that box Q has more chocolates than box P?