

Writing Expressions and Formulae

For Pearson Edexcel GCSE Mathematics (1MA1) • Foundation tier

Name _____

Total marks: **32**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

- 1** Amy has x red pens and y blue pens.

Write down an expression, in terms of x and y , for the total number of pens Amy has.

.....
(1)

(Total for Question 1 is 1 mark)

2 Write down an expression, in terms of n , for

(a) 7 more than n

.....
(1)

(b) 3 times n , minus 2

.....
(1)

(c) n squared

.....
(1)

(Total for Question 2 is 3 marks)

3 Oliver is x years old.

(a) Write down an expression, in terms of x , for Oliver's age in 5 years' time.

.....
(1)

(b) Write down an expression, in terms of x , for Oliver's age 3 years ago.

.....
(1)

(c) Oliver's grandad is 6 times as old as Oliver is now.
Write down an expression, in terms of x , for the sum of their ages now.

.....
(1)

(Total for Question 3 is 3 marks)

- 4** A shop sells notebooks for n pence each.
It sells pencils for k pence each.

(a) Write an expression for the total cost, in pence, of 4 notebooks and 6 pencils.

.....
(1)

(b) The total cost of 3 notebooks and 1 pencil is T pence.
Write a formula for T in terms of n and k .

.....
(1)

(Total for Question 4 is 2 marks)

- 5** A plumber charges £40 to call out, plus £30 for each hour she works.
The total charge for a job lasting h hours is £ C .
Write a formula for C in terms of h .

.....
(2)

(Total for Question 5 is 2 marks)

- 6 A builder uses this rule to work out the number of bricks, B , needed for a wall of length L metres.

Multiply the length by 60, then add 10

Write a formula for B in terms of L .

.....
(2)

(Total for Question 6 is 2 marks)

- 7 A rectangle has length $3x$ cm and width $(x + 2)$ cm.
The perimeter of the rectangle is P cm.

Write a formula for P in terms of x .
Give your answer in its simplest form.

.....
(2)

(Total for Question 7 is 2 marks)

- 8** The sizes of the angles in a triangle are x° , $2x^\circ$ and $(x + 20)^\circ$.
- (a) Write an expression, in terms of x , for the sum of the angles.
Give your answer in its simplest form.

.....
(2)

- (b) Explain why $4x + 20 = 180$

.....
.....
(1)

(Total for Question 8 is 3 marks)

- 9** Laura has $\text{£}m$.
She spends $\text{£}12$
She shares the rest of the money equally between herself and her sister.
Write an expression, in terms of m , for the amount each person gets.

£
(2)

(Total for Question 9 is 2 marks)

- 10** A large tin of paint holds x litres.
A small tin of paint holds 3 litres less than a large tin.
Kieran buys 2 large tins and 5 small tins.

Write an expression, in terms of x , for the total amount of paint Kieran buys.
Give your answer in its simplest form.

..... litres
(3)

(Total for Question 10 is 3 marks)

- 11** (a) A train travels at x miles per hour for 3 hours.
Write down an expression for the distance it travels, in miles.

.....
(1)

- (b) A car travels 150 miles in t hours.
Write down an expression for the average speed of the car, in miles per hour.

.....
(1)

(Total for Question 11 is 2 marks)

12 Write a formula for the number of seconds, s , in m minutes.

.....
(1)

(Total for Question 12 is 1 mark)

13 n is an integer, so $2n$ is an even number.

(a) Write down expressions, in terms of n , for the next two even numbers after $2n$.

.....
(1)

(b) Show that the mean of three consecutive even numbers is always equal to the middle number.

(2)
(Total for Question 13 is 3 marks)

- 14** A school hall has r rows of chairs.
There are 18 chairs in each row.
There are also 30 chairs around the edge of the hall.
At a concert, every chair is used except for e empty chairs.
There are P people sitting on chairs.

Write a formula for P in terms of r and e .

.....

(3)

(Total for Question 14 is 3 marks)
