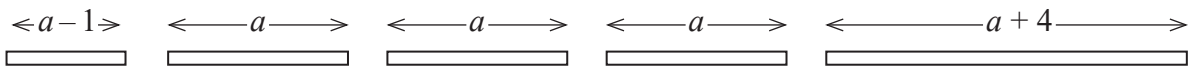
Autumn 2017 Paper 1 Q6

1 Here are five straight rods.



All measurements are in centimetres.

The total length of the five rods is L cm.

Find a formula for L in terms of a.
Write your formula as simply as possible.

.....

(Total for Question 1 is 3 marks)

Autumn 2017 Paper 2 Q3

2 (a) Simplify $3f \times 5g$

.....

(1)

(b) Simplify $t \times t$

.....

(1)

(c) Simplify $\dfrac{2n + 6n}{2}$

.....

(1)

(Total for Question 2 is 3 marks)

Autumn 2017 Paper 3 Q2

3 Simplify $y + 3y - 2y$

.....

(Total for Question 3 is 1 mark)

Summer 2017 Paper 2 Q1

4 (a) Simplify $5p - 3p + p$

.....

(1)

(b) Simplify $m^3 + m^3$

.....

(1)

(c) Simplify $10 + 3c + 5d - 7c + d$

.....

(2)

(Total for Question 4 is 4 marks)

Summer 2017 Paper 2 Q14

5 (a) Factorise $5 - 10m$

.....

(1)

(b) Factorise fully $2a^2b + 6ab^2$

.....

(2)

(Total for Question 5 is 3 marks)

Summer 2017 Paper 3 Q2

6 Cups are sold in packs and in boxes.

There are 12 cups in each pack.
There are 18 cups in each box.

Alison buys p packs of cups and b boxes of cups.

Write down an expression, in terms of p and b, for the total number of cups Alison buys.

.....

(Total for Question 6 is 2 marks)

Autumn 2018 Paper 2 Q7

7 (a) Simplify $3m - m - m + 3m$

.....

(1)

(b) Simplify $2 \times n \times p \times 4$

.....

(1)

(Total for Question 7 is 2 marks)

Summer 2018 Paper 1 Q6

8 (a) Simplify $3 \times 4t$

.....

(1)

(b) Simplify $8a - 3a + 2a$

.....

(1)

(Total for Question 8 is 2 marks)

Summer 2018 Paper 3 Q20

9 Expand and simplify $5(p + 3) - 2(1 - 2p)$

.....

(Total for Question 9 is 2 marks)

Autumn 2019 Paper 1 Q13

10 (a) Simplify $2a \times 5b$

.....

(1)

(b) Simplify $3x + 2y + 5x - y$

.....

(2)

(Total for Question 10 is 3 marks)

Summer 2019 Paper 1 Q16

11 (a) Expand $5(2m - 3)$

.....

(1)

(b) Factorise $3n + 12$

.....

(1)

(Total for Question 11 is 2 marks)

Summer 2019 Paper 2 Q7

12 There are y boats on a lake.
There are 7 people in each boat.

Write an expression, in terms of y, for the total number of people in the boats.

.....

(Total for Question 12 is 1 mark)

Summer 2019 Paper 2 Q8

13 (a) Simplify $a \times b \times 7$

.....

(1)

(b) Simplify $y \times y \times y$

.....

(1)

(c) Simplify fully $\dfrac{e \times e \times e \times f}{e \times e \times f \times f}$

.....

(2)

(Total for Question 13 is 4 marks)

Summer 2019 Paper 3 Q9

14 Simplify $4e + 6f + 7e - f$

.....

(Total for Question 14 is 2 marks)

Summer 2020 Paper 1 Q19

15 (a) Expand $x(x - 4)$

.....

(1)

(b) Factorise $15y - 10$

.....

(1)

(c) Solve $7(f - 5) = 28$

$f =$ .....

(2)

(Total for Question 15 is 4 marks)

Summer 2020 Paper 2 Q3

16 Simplify $3e - e + 4e$

.....

(Total for Question 16 is 1 mark)

Summer 2020 Paper 3 Q14

17 (a) Simplify $3x + 5y + 2x - 4y$

.....

(2)

(b) Solve $5p + 7 = 22$

$p =$ .....

(2)

(Total for Question 17 is 4 marks)

Autumn 2021 Paper 2 Q4

18 (a) Simplify $m + m + m + m$

.....

(1)

(b) Simplify $12p \div 4$

.....

(1)

(Total for Question 18 is 2 marks)

Autumn 2021 Paper 3 Q6

19 (a) Simplify $a \times b \times 4$

.....

(1)

(b) Simplify $4x + 3 - x + 5$

.....

(2)

(Total for Question 19 is 3 marks)

Autumn 2021 Paper 3 Q17

20 (a) Expand $y(y + 5)$

.....

(1)

(b) Factorise $4a - 6$

.....

(1)

(c) Solve $2(5x - 4) = 21$

$x =$ .....

(3)

(d) Simplify $4e^2f \times 5ef^3$

.....

(2)

(Total for Question 20 is 7 marks)

Autumn 2022 Paper 1 Q5

21 Simplify $3 \times w \times 5 \times t$

.....

(Total for Question 21 is 1 mark)

Autumn 2022 Paper 2 Q14

22 (a) Simplify $4c + 7d + 3c - d$

.....

(2)

(b) Solve $5(2m - 6) = 40$

$m =$ .....

(3)

There are x sweets in a box.

There are y sweets in a packet.

(c) Write an expression, in terms of x and y, for the total number of sweets in 3 boxes and 2 packets.

.....

(2)

(Total for Question 22 is 7 marks)

Summer 2022 Paper 1 Q2

23 Simplify $e + e + e + e$

.....

(Total for Question 23 is 1 mark)

Summer 2022 Paper 3 Q4

24 Simplify $2m \times 3$

.....

(Total for Question 24 is 1 mark)

Summer 2022 Paper 3 Q17

25 (a) Expand $3(4 - 2x)$

.....

(1)

(b) Solve $\frac{3y}{4} = 12$

$y =$ .....

(2)

(c) Factorise $4p + 6$

.....

(1)

(Total for Question 25 is 4 marks)

Autumn 2017 Paper 2 Q24

26 (a) Solve $2x^2 = 72$

.....

(2)

(b) Expand and simplify $(2x + 1)(3x - 2)$

.....

(2)

(c) Factorise $x^2 + 6x + 9$

.....

(1)

(Total for Question 26 is 5 marks)

Autumn 2017 Paper 3 Q17

27 (a) Factorise $4m + 12$

.....

(1)

expression	equation	formula	identity
inequality	term	factor	multiple

(b) Choose two words from the box above to make this statement correct.

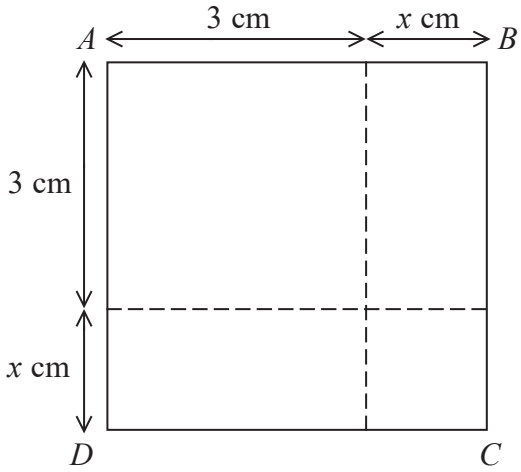
$5y$ is a ..... in the ..... $3x + 5y$

(2)

(Total for Question 27 is 3 marks)

Summer 2017 Paper 1 Q24

28



The area of square *ABCD* is 10 cm^2.

Show that $x^2 + 6x = 1$

(Total for Question 28 is 3 marks)

Autumn 2018 Paper 2 Q26

29 (a) Expand and simplify $(5x + 2)(2x - 3)$

.....

(2)

(b) Factorise $x^2 + 4x + 3$

.....

(2)

(Total for Question 29 is 4 marks)

Autumn 2019 Paper 2 Q18

30 Ben is n years old.
Chloe is twice as old as Ben.
Dan is five years younger than Ben.

The total of Ben's age, Chloe's age and Dan's age is T years.

(a) Find a formula for T in terms of n.

.....

(3)

(b) In the table below, put a tick (✓) in the box next to the identity.

$3h + 2 = 14$	
$3a + 4b - 2c$	
$A = \pi r^2$	
$5m - 3m = 2m$	
$x + 7 \leqslant 12$	

(1)

(Total for Question 30 is 4 marks)

Autumn 2019 Paper 3 Q22

31 (a) Expand and simplify $(x + 5)(x - 9)$

.....

(2)

(b) Factorise fully $9x^2 + 6x$

.....

(2)

(Total for Question 31 is 4 marks)

Summer 2022 Paper 2 Q21

32 (a) Simplify $(x^3)^5$

.....

(1)

(b) Expand and simplify $4(x + 3) + 7(4 - 2x)$

.....

(2)

(c) Factorise fully $15x^3 + 3x^2y$

.....

(2)

(Total for Question 32 is 5 marks)