



Question	Type of Question	Marks Awarded		Marks Available	Objective Covered	RAG (Pre)	RAG (Post)
1	Skill			2	I understand and can use the rules of algebra.		
2	Skill			3	I can form expressions using algebraic notation.		
3	Skill			4	I can collect like terms when adding and subtracting.		
4	Skill			3	I can collect like terms when multiplying and dividing.		
5	Skill			6	I can expand single brackets.		
6	Skill			4	I can expand single brackets then collect like terms.		
7	Skill			2	I can factorise expressions with a number factor.		
8	Skill			2	I can factorise expressions with an algebraic factor.		
9	Skill			3	I can write algebraic expressions with decimal coefficients as fractions.		
10	Mastery			3	I understand and can use the rules of algebra.		
11	Mastery			2	I can form expressions using algebraic notation.		
12	Mastery			6	I can collect like terms when adding and subtracting.		
13	Mastery			3	I can collect like terms when multiplying and dividing.		
14	Mastery			2	I can expand single brackets.		
15	Mastery			6	I can expand single brackets then collect like terms.		
16	Mastery			2	I can factorise expressions with a number factor.		
17	Mastery			4	I can factorise expressions with an algebraic factor.		
18	Mastery			3	I can write algebraic expressions with decimal coefficients as fractions.		
19	Greater Depth			3	I understand and can use the rules of algebra.		
20	Greater Depth			3	I can form expressions using algebraic notation.		
21	Greater Depth			2	I can collect like terms when adding and subtracting.		
22	Greater Depth			3	I can collect like terms when multiplying and dividing.		
23	Greater Depth			3	I can expand single brackets.		
24	Greater Depth			4	I can expand single brackets then collect like terms.		
25	Greater Depth			1	I can factorise expressions with a number factor.		
26	Greater Depth			2	I can factorise expressions with an algebraic factor.		
27	Greater Depth			2	I can write algebraic expressions with decimal coefficients as fractions.		

Skill	Mastery	Greater Depth	Total	%
$\frac{\square}{29}$ $\frac{\square}{29}$	$\frac{\square}{31}$ $\frac{\square}{31}$	$\frac{\square}{23}$ $\frac{\square}{23}$	$\frac{\square}{83}$ $\frac{\square}{83}$	

<p>1. Fill in the gaps to make these algebraic statements true.</p> <p>a) $m + n = \underline{\quad} + \underline{\quad} = p$</p> <p>Use the letters m and n.</p> <p>b) $\underline{\quad} = ed = f$</p> <p>Use the letters d and e.</p> <p>S (2 marks)</p>	<p>a) $m + n = \underline{\quad} + \underline{\quad} = p$</p> <p>b) $\underline{\quad} = ed = f$</p>	<p>a) $m + n = \underline{\quad} + \underline{\quad} = p$</p> <p>b) $\underline{\quad} = ed = f$</p>
<p>2. Write down an algebraic expression for each of the following:</p> <p>a) Add $9c$ to the product of $12a$ and b.</p> <p>b) Subtract 0.4 from three lots of u.</p> <p>c) Add four lots of x to the sum of 3.5 and k.</p> <p>S(3 marks)</p>		
<p>3. Simplify the following by collecting like terms:</p> <p>a) $5y + 7y$</p> <p>b) $8.2x - 6.1x + 5$</p> <p>c) $6a + 10b + 4a - 3b$</p> <p>d) $17f - 12g - 9f + 5g$</p> <p>S (4 marks)</p>		
<p>4. Simplify:</p> <p>a) $5k \times 4k$</p> <p>b) $(-12y) \times 6x$</p> <p>c) $\frac{18y^2}{4.5}$</p> <p>S (3 marks)</p>		

<p>5. Expand these brackets:</p> <ul style="list-style-type: none">a) $4(x + 3)$b) $6(2s - 3t)$c) $a(5b - 4)$d) $-(7y - 3)$ <p>S (6 marks)</p>		
<p>6. Expand these brackets and then simplify:</p> <ul style="list-style-type: none">a) $3(x + 5) + 4(x + 3)$b) $5(y - 5) + 4(3y - 3)$ <p>S(4 marks)</p>		
<p>7. Factorise:</p> <ul style="list-style-type: none">a) $10x + 5$b) $14y - 28$ <p>S(2 marks)</p>		
<p>8. Factorise:</p> <ul style="list-style-type: none">a) $6y + 5y^2$b) $8x^3 - 3x$ <p>S(2 marks)</p>		

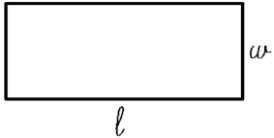
<p>9. Simplify by writing any decimal coefficients as fractional coefficients.</p> <p>a) $0.25x$ b) $0.1y$ c) $1.5z$</p> <p>S (3 marks)</p>		
<p>10. Explain why the following is true. Explain each step clearly.</p> $24 \div 3 = 24 \times \frac{1}{3} = \frac{24}{3} = 8$ <p>M (3 marks)</p>		
<p>11. I am going to buy some 10p stamps and some 11p stamps. I want to spend exactly 93p. Write this as a symbol sentence and find whole number values that satisfy your sentence.</p> <p>M(2 marks)</p>		
<p>12. a) Simplify $-5h + (-3k) + 3h - (-9k)$</p> <p>b) Simplify $3x^2 - 9x + 5 + (-2x^2) - (-10x) - 7$</p> <p>c) Find the sum of $3.7a + b$ and $-2.4a + 4b$.</p> <p>M (6 marks)</p>		

13. Find the product:

- a) $\frac{1}{3}c \times 15c$
b) $6.3e^3 \times 4.2e^2$

M (3 marks)

14. John is trying to calculate the perimeter of the rectangle. The rectangle has length l and width w .



- a) Write an expression for the perimeter. Your expression should be in the form $a(l + w)$ where a is a whole number.
b) Expand your expression to find an expression for the perimeter of the rectangle in terms of l and w .

M (2 marks)

15. Expand these brackets and then simplify:

- a) $-7(3n - 5) - 2(n - 3)$
b) $2p - 3.5(2 - p) + 4(p - 1)$
c) $x(7x - 1) - 3x(3x + 8)$

M(6 marks)

16. Sarah says $20x + 4$ can be written as $2(10x + 2)$.
Jim thinks $20x + 4$ can be written as $4(5x + 1)$.
Decide who is correct and give a reason for your answer.

M(2 marks)

17. Factorise these expressions completely:

a) $12x^2y + 4x$

b) $\pi r^2 + \pi rl$

M(4 marks)

18. Simplify by writing any decimal coefficients as fractional coefficients. Write your answer as simply as possible.

a) $0.25x \times (-3)$

b) $\frac{1}{4}a + 1.25a$

c) $5y - 7.5y$

M (3 marks)

19. Correct the following incorrect algebraic notation.

Explain the mistake that has been made.

a) $-3a = 3 \times -a = -a \times -a \times -a$

b) $\frac{1}{3}a^2b = \left(\frac{1}{3} \times a \times a\right) + \left(\frac{1}{3} \times b\right)$

c) $x + 4 \div y = \frac{x+4}{y}$

G(3 marks)

20. Ethan went shopping and bought a jacket for £3y and a tie that cost £y less than the jacket. He had £20y left. How much money did he have at first?

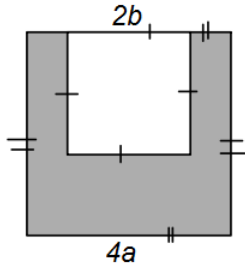
G(3 marks)

21. Simplify:

$$4x^2 - 6 - (5x^2 + 10x - 4)$$

G (2 marks)

22. Find an expression for the area of the shaded section in terms of a and b .



G (3 marks)

23. Amy and her mum are working on a puzzle. They are told that Zoe is ' a ' years old and that Zach is 1 year older than Zoe.

- a) Create an expression that shows the sum of Zoe and Zach's ages.

Zara is 5 times as old as the sum of Zoe and Zach's age.

- b) Write an expression for Zara's age. Use brackets in your expression.
- c) Expand the brackets to find an expression for Zara's age in terms of a .

G (3 marks)

<p>24. Expand then simplify these brackets:</p> <p>a) $5[12k - (50 + 22k)]$ b) $4\{e - 3[f - 6(f - e)]\}$</p> <p>G(4 marks)</p>		
<p>25. Show, by factorising, that $32x + 20$ is always a multiple of 4.</p> <p>G(1 mark)</p>		
<p>26. Factorise these expressions completely:</p> <p>a) $-ab^3c + b^2c^2$</p> <p>G (2 marks)</p>		
<p>27. Simplify the following. Give your answer as a single fraction.</p> <p>$3x + 4.5x + (-3.25x)$</p> <p>G(2 marks)</p>		