



ACHIEVE ACADEMY

GCSE Maths — Foundation Tier

Expressions, Substitution & Simplifying · Practice Booklet

NAME: _____

CLASS: _____

DATE: _____

☐ Developing

☒ Secure

☐ Greater Depth

Answer every question in the working space provided. Method marks are available for correct working even if the final answer is wrong. Check the time allowed with your tutor before you start.

Expressions, Substitution & Simplifying

Total marks available: 70

● Expressions, Substitution & Simplifying

✓ -10

Q1 · ● Developing · 2 marks

METHOD

$$3 \times (-4) + 2 = -12 + 2 = -10$$

✓ -10a

Q2 · ● Developing · 2 marks

METHOD

Add the coefficients of a: $1 + (-7) + (-8) + 4 = -10$

✓ -2

Q3 · ● Developing · 2 marks

METHOD

$$2 \times (-5) + 8 = -10 + 8 = -2$$

✓ 8

Q4 · ● Developing · 2 marks

METHOD

$$-(-8) = 8$$

✓ -29

Q5 · ● Developing · 2 marks

METHOD

$$3 \times (-7) - 8 = -21 - 8 = -29$$

✓ 19b

Q6 · ● Developing · 2 marks

METHOD

Add the coefficients of b: $-3 + 6 + 8 + 8 = 19$

✓ $-2x$

Q7 · ● Developing · 2 marks

METHOD

Add the coefficients of x : $5 + (-5) + (-3) + 1 = -2$

✓ $-7b$

Q8 · ● Developing · 2 marks

METHOD

Add the coefficients of b : $-4 + 1 + (-6) + 2 = -7$

✓ -18

Q9 · ● Developing · 2 marks

METHOD

$-3 \times (4) - 6 = -12 - 6 = -18$

✓ 3

Q10 · ● Developing · 2 marks

METHOD

$3 \times (-1) + 6 = -3 + 6 = 3$

✓ $7(2x - 5)$

Q11 · ● Secure · 2 marks

METHOD

HCF of 14 and 35 is 7

$14x - 35 = 7(2x - 5)$

✓ $9(2x + 4)$

Q12 · ● Secure · 2 marks

METHOD

HCF of 18 and 36 is 9

$18x + 36 = 9(2x + 4)$

✓ $-24y + 4$

Q13 · ● Secure · 2 marks

METHOD

$$4 \times -6y = -24y$$

$$4 \times 1 = 4$$

✓ $6(7n + 8)$

Q14 · ● Secure · 2 marks

METHOD

HCF of 42 and 48 is 6

$$42n + 48 = 6(7n + 8)$$

✓ $-30b + 30$

Q15 · ● Secure · 2 marks

METHOD

$$5 \times -6b = -30b$$

$$5 \times 6 = 30$$

✓ $30y + 6$

Q16 · ● Secure · 2 marks

METHOD

$$6 \times 5y = 30y$$

$$6 \times 1 = 6$$

✓ $42x - 30$

Q17 · ● Secure · 2 marks

METHOD

$$6 \times 7x = 42x$$

$$6 \times -5 = -30$$

✓ $40y - 40$

Q18 · ● Secure · 2 marks

METHOD

$$8 \times 5y = 40y$$

$$8 \times -5 = -40$$

✓ $48x + 54$

Q19 · ● Secure · 2 marks

METHOD

$$6 \times 8x = 48x$$

$$6 \times 9 = 54$$

✓ $2(5x - 7)$

Q20 · ● Secure · 2 marks

METHOD

HCF of 10 and 14 is 2

$$10x - 14 = 2(5x - 7)$$

✓ $x^2 - 1$

Q21 · ● Greater Depth · 3 marks

METHOD

$$= x^2 - x + x - 1$$

$$= x^2 - 1$$

✓ $a^2 + 3a - 54$

Q22 · ● Greater Depth · 3 marks

METHOD

$$= a^2 + 9a - 6a - 54$$

$$= a^2 + 3a - 54$$

✓60

Q23 · ● Greater Depth · 3 marks

METHOD

$$2 \times (5)^2 + 2 \times (5) = 50 + 10 = 60$$

✓ $a^2 + 8a - 9$

Q24 · ● Greater Depth · 3 marks

METHOD

$$\begin{aligned} &= a^2 - a + 9a - 9 \\ &= a^2 + 8a - 9 \end{aligned}$$

✓ $b^2 - 2b - 15$

Q25 · ● Greater Depth · 3 marks

METHOD

$$\begin{aligned} &= b^2 - 5b + 3b - 15 \\ &= b^2 - 2b - 15 \end{aligned}$$

✓ $n^2 + 5n + 4$

Q26 · ● Greater Depth · 3 marks

METHOD

$$\begin{aligned} &= n^2 + 4n + n + 4 \\ &= n^2 + 5n + 4 \end{aligned}$$

✓95

Q27 · ● Greater Depth · 3 marks

METHOD

$$3 \times (5)^2 + 4 \times (5) = 75 + 20 = 95$$

✓2

Q28 · ● Greater Depth · 3 marks

METHOD

$$3 \times (-2)^2 + 5 \times (-2) = 12 - 10 = 2$$

$$\checkmark n^2 - n - 42$$

Q29 · ● Greater Depth · 3 marks

METHOD

$$\begin{aligned} &= n^2 + 6n - 7n - 42 \\ &= n^2 - n - 42 \end{aligned}$$

$$\checkmark -40$$

Q30 · ● Greater Depth · 3 marks

METHOD

$$-1 \times (5)^2 - 3 \times (5) = -25 - 15 = -40$$