1. (a) Simplify

(i) $3g + 5g$

.....

(ii) $2r \times 5p$

.....

(2)

(b) Expand $5(2y - 3)$

.....

(1)

(c) Expand and simplify

$2(3x + 4) - 3(4x - 5)$

.....

(2)

(Total 5 marks)

2. Simplify

(i) $p^2 \times p^7$

……

(ii) $x^8 \div x^3$

……

(Total 2 marks)

3. (a) Factorise $3t - 12$

……

(1)

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

……

(2)

(Total 3 marks)

4. (a) Simplify

(i) $p^2 \times p^7$

……

(ii) $x^8 \div x^3$

……

(iii) $\dfrac{y^4 \times y^3}{y^5}$

……

(3)

(b) Expand $t(3t^2 + 4)$

……

(2)
(Total 5 marks)

5. (a) Expand and simplify

$$3(2x - 1) - 2(2x - 3)$$

……

(2)

(b) Factorise

$$y^2 + y$$

……

(1)
(Total 3 marks)

6. (a) Simplify

(i) $3a + 4b - 2a - b$

.....

(ii) $5x^2 + 2x - 3x^2 - x$

.....

(4)

(b) Expand the brackets

(i) $4(2x - 3)$

.....

(ii) $p(q - p^2)$

.....

(2)

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

.....

(2)
(Total 8 marks)

7. (a) Expand the brackets $p(q - p^2)$

.....

(1)

(b) Expand and simplify $5(3p + 2) – 2(5p – 3)$

.....

(2)
(Total 3 marks)

8. (a) Simplify $3p + 2q – p + 2q$

……..

(2)

(b) Simplify $3y^2 – y^2$

……..

(1)

(c) Simplify $5c + 7d – 2c – 3d$

……..

(2)

(d) Simplify $4p \times 2q$

……..

(1)
(Total 6 marks)

9. (a) Factorise $p^2 + 6p$

…….

(2)

(b) Expand and simplify $(x + 7)(x – 4)$

…….

(2)
(Total 4 marks)

10. (a) Expand and simplify $(x + 7)(x – 4)$

…….

(2)

(b) Expand $y(y^3 + 2y)$

…….

(2)

(c) Factorise $p^2 + 6p$

……..

(2)

(d) Factorise completely $6x^2 - 9xy$

……..

(2)
(Total 8 marks)

11. (a) Expand and simplify

$(x - y)^2$

.....

(2)

(b) Rearrange $a(q - c) = d$ to make q the subject.

$q =$ .....

(3)

(Total 5 marks)

12. (a) Solve $4y + 1 = 2y + 8$

$y =$……

(2)

(b) Simplify $2(t + 5) + 13$

……

(2)

(Total 4 marks)

13. Simplify

(a) $e + f + e + f + e$

……

(1)

(b) $2xy + 3xy - xy$

……

(1)

(c) $3a + 5b - a + 2b + 8$

……

(2)
(Total 4 marks)

14. (a) Simplify

(i) $x^4 \times x^5$

……

(ii) $\frac{p^8}{p^3}$

……

(iii) $3s^2t^3 \times 4s^4t^2$

……

(iv) $(q^3)^4$

……

(5)

(b) Expand $3(2g - 1)$

……

(1)

(c) Expand and simplify $(x + 2)(x + 3)$

……

(2)
(Total 8 marks)

15. (a) Solve $\frac{y}{4} = 5$

$y =$ .....

(1)

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

.....

(1)

(c) Simplify

(i) $m^2 \times m^5$

.....

(ii) $t^7 \div t^3$

.....

(2)

(d) Expand and simplify $(x + 5)(x + 3)$

.....

(2)

(Total 6 marks)

16. (a) Simplify $4p + 5q + p - 3q$

.....

(2)

(b) Expand $y(y - 5)$

.....

(1)

(c) Expand and simplify $2(3m + 4) + 3(m – 5)$

.....

(2)
(Total 5 marks)

17. (a) Solve $3(x – 4) = x + 24$

$x =$ .....

(3)

(b) Simplify fully $(2x^3y)^4$

.....

(2)
(Total 5 marks)

18. (a) Simplify $p^7 \times p^2$

.....

(1)

(b) Simplify $\frac{q^8}{q^3}$

.....

(1)

(c) Simplify $(t^3)^4$

.....

(1)

(d) Expand and simplify $2(3m + 4) + 3(m - 5)$

.....

(2)

(Total 5 marks)

19. (a) Simplify $a + a + a + a$

.....

(1)

(b) Simplify $3 \times b \times 4$

.....

(1)

(c) Simplify completely $4a + 5b - 2a + b$

.....

(2)

(d) Factorise $x^2 - 6x$

.....

(2)

(Total 6 marks)

20. (a) Simplify fully $4a + 5b - 2a + b$

.....

(2)

(b) Factorise $x^2 - 6x$

.....

(2)

(c) Expand $x(3 - 2x^2)$

.....

(2)

(d) Factorise completely $12xy + 4x^2$

.....

(2)

(Total 8 marks)

21. (a) Solve $x + x + x = 15$

$x =$ .....

(1)

(b) Solve $4y + 1 = 12$

$y =$ .....

(2)

(c) Simplify $cd + 2cd$

.....

(1)

(d) Simplify $4p + 3q - p - 4q$

.....

(2)

(Total 6 marks)

22. Simplify (a) $p^7 \times p^9$

.....

(1)

Simplify (b) $\dfrac{q^{12} \times q^4}{q^6}$

.....

(1)

(Total 2 marks)

23. (a) Simplify $d + d + d + d + d$

.....

(1)

(b) Simplify $y^2 + y^2$

.....

(1)

(c) Expand $4(3a - 7)$

.....

(2)

(d) Simplify $t \times t^2$

.....

(1)

(e) Simplify $m^5 \div m^3$

.....

(1)

(Total 6 marks)

24. (a) Simplify $4a + 3c - 2a + c$

.....

(1)

(b) $S = \frac{1}{2}at^2$

Find the value of S when $t = 3$ and $a = \frac{1}{4}$

$S =$ .....

(2)

(c) Factorise $x^2 - 5x$

.....

(2)

(d) Solve $7x - 19 = 3(x - 3)$

$x =$ .....

(3)

(Total 8 marks)

25. (a) Simplify $4p \times 5q$

.....

(1)

(b) Simplify $d \times d \times d \times d$

.....

(1)

(c) Expand $4(3a - 7)$

.....

(2)

(d) Expand and simplify $2(2n + 3) + 3(n + 1)$

.....

(2)

(e) Simplify $t \times t^2$

.....

(1)

(f) Simplify $m^5 \div m^3$

.....

(1)
(Total 8 marks)

26. (a) Simplify $4a + 3c - 2a + c$

.....

(1)

(b) $S = \frac{1}{2}at^2$

Find the value of S when $t = 3$ and $a = \frac{1}{4}$

$S =$ .....

(2)

(c) Factorise $x^2 - 5x$

.....

(2)

(d) Expand and simplify $(x + 3)(x + 4)$

.....

(2)

(e) Factorise $y^2 + 8y + 15$

.....

(2)

(Total 9 marks)

27. (a) Simplify $5bc + 2bc - 4bc$

.....

(1)

(b) Simplify $4x + 3y - 2x + 2y$

.....

(2)

(c) Simplify $m \times m \times m$

.....

(1)

(d) Simplify $3n \times 2p$

.....

(1)

(e) Factorise $5m + 10$

.....

(1)

(Total 6 marks)

28. (a) Simplify $5bc + 2bc - 4bc$

.....

(1)

(b) Simplify $4x + 3y - 2x + 2y$

.....

(2)

(c) Simplify $m \times m \times m$

.....

(1)

(d) Simplify $3n \times 2p$

.....

(1)

(Total 5 marks)

Factorise $5m + 10$

.....

(1)

(Total 6 marks)

29. (a) Simplify $8x - 4x$

.....

(1)

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

.....

(1)

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

.....

(2)

(Total 4 marks)

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

.....

(2)

Compasses cost c pence each.
Rulers cost r pence each.

(b) Write down an expression for the total cost, in pence, of 2 compasses and 4 rulers.

..... pence

(2)

(Total 4 marks)

31. (a) Simplify $a \times a \times a$

.....

(1)

(b) Expand $5(3x - 2)$

.....

(1)

(c) Expand $3y(y + 4)$

.....

(2)

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

.....

(2)

(e) Expand and simplify $(x + 4)(x - 3)$

.....

(2)
(Total 8 marks)

32. (a) Solve the inequality $5x + 12 > 2$

……

(2)

(b) Expand and simplify

$(x - 6)(x + 4)$

……

(2)
(Total 4 marks)

33. (a) Simplify

$m + m + m + m$

……

(1)

(b) Simplify

$5p + 7q + 3p - 2q$

……

(2)
(Total 3 marks)

34. Simplify

$3a + 5b + 6a - 2b$

.....

(Total 2 marks)

35. Expand and simplify

$$(y + 5)(y + 3)$$

.....

(Total 2 marks)

36. Simplify

$$6x + 3y - x + 5y$$

.....

(Total 2 marks)

37. Simplify

$9e + 5f - 2e + f$

.....

(Total 1 mark)

38. Simplify

$c \times c \times c \times c \times c$

.....

(Total 1 mark)

39. Expand and simplify

$(x + 7)(x + 5)$

.....

(Total 2 marks)

40. Expand and simplify $(x – 9)(x + 4)$

.....

(Total 2 marks)

41. (a) Simplify $3y^2 – y^2$

……..

(1)

(b) Simplify $5c + 7d – 2c – 3d$

……..

(2)

(Total 3 marks)

42. Simplify $3a + 7b + 9a – 4b$

.....

(Total 2 marks)

43. (a) Solve $4x + 3 = 19$

$x =$…….

(2)

(b) Simplify $2(t + 5) + 13$

…….

(2)

(Total 4 marks)

44. (a) Simplify

(i) $x^4 \times x^5$

…….

(ii) $\frac{p^8}{p^3}$

…….

(2)

(b) Expand $3(2g – 1)$

…….

(1)

(Total 3 marks)

45. Simplify $4a + 3c – a – 4c$

$3a + c$	$5a + 7c$	$5a – c$	$3a + 7c$	$3a – c$
☐	☐	☐	☐	☐
A	**B**	**C**	**D**	**E**

(Total 1 mark)

46. Expand and simplify fully

$(x + 4)(x + 7)$

$x^2 + 28$	$x^2 + 28x + 28$	$x^2 + 11x + 11$	$x^2 + 4x + 7x + 11$	$x^2 + 11x + 28$
☐	☐	☐	☐	☐
A	**B**	**C**	**D**	**E**

(Total 1 mark)

47. Simplify $3a + 4c – a – 5c$

$2a – c$	$4a + 9c$	$2a + c$	$4a + c$	$2a + 9c$
A	**B**	**C**	**D**	**E**

(Total 1 mark)

48. Simplify $6c + 2d + c + 5d$

.....

(Total 2 marks)

49. (a) Expand $c(d + 4)$

.....

(1)

(b) Expand and simplify $3(x + 5) + 2(x – 1)$

.....

(2)
(Total 3 marks)

50.(a) Simplify fully $3x + 5y + 2x – 6y$

.....

(2)

(b) Simplify fully $\frac{2x}{4xy}$

.....

(2)

(c) Expand and simplify $\frac{1}{2}(2x-6)$

.....

(1)

(Total 5 marks)

51. What is $2a + 5b + 3a - 2b$ written in its simplest form?

$5a + 7b$	$12ab$	$8ab$	$5a - 3b$	$5a + 3b$
A	**B**	**C**	**D**	**E**

(Total 1 mark)

52. $(x + 3)(x + 4) =$

$x^2 - 7x + 7$	$x^2 + 12$	$2x + 7$	$x^2 + 7x + 12$	$x^2 + 7x + 7$
A	**B**	**C**	**D**	**E**

(Total 1 mark)

53. (a) Simplify

$$8e - 3f - e - 3f$$

.....

(2)

(b) Expand

$2(3c - 2)$

.....

(1)

(c) Factorise

$xy + 3x$

.....

(1)

(Total 4 marks)

54. Simplify $5e - 3f + e + 4f$

$6ef$	$5e + f$	$6e - 7f$	$6e - f$	$6e + f$
A	**B**	**C**	**D**	**E**

(Total 1 mark)

55. Expand and simplify $3(2x + y) - (x - 2y)$

$5x + 5y$	$5x + y$	$6x^2 - 9xy + 6y^2$	$6x + 3y$	$5x + 3y$
A	**B**	**C**	**D**	**E**

(Total 1 mark)

56. (a) Expand and simplify $3(2x + 3) + 2(x + 1)$

.....

(2)

(b) Expand and simplify $(y – 3)(y + 4)$

.....

(2)
(Total 4 marks)

1. (a) (i) $8g$ 2
B1 oe

(ii) $10rp$
B1 for 10pr or 10 rp

(b) $10y – 15$ 1
B1 cao accept 10y – + 15

(c) $– 6x + 23$ 2
$6x + 8 – 12x + 15$
M1 for 3 correct terms out of 4
A1 cao

[5]

2. (i) p^9 2

B1 cao

(ii) x^5

B1 cao

[2]

3. (a) $3(t-4)$ 1

B1 cao

(b) $2x + 3$ 2

$6x – 3 – 4x + 6 = 2x + 3$

B1 for either $6x – 3$ or $– 4x + 6$

B1 cao

[3]

4. (a) (i) p^9 3

B1 cao

(ii) x^5

B1 cao

(iii) y^2

B1 cao

(b) $3t^3 + 4t$ 2

B2 for $3t^3 + 4t$

(B1 for either $3t^3$ or $4t$ seen or $3t^3 + 4t$ then an error)

[5]

5. (a) $2x + 3$ 2

$6x – 3 – 4x + 6 = 2x + 3$

B1 for either $6x – 3$ or $– 4x + 6$

B1 cao

(b) $y(y + 1)$ 1

B1 cao

[3]

6. (a) (i) $a + 3b$ 2

B2 for a + 3b oe
(B1 for a or 1a or 3b)

(ii) $2x^2 + x$ 2

B2 for $2x^2 + x$ oe
(B1 for $2x^2$ or x or 1x)

(b) (i) $8x - 12$ 1

B1 oe

(ii) $pq - p^3$ 1

B1 oe accept $p \times q - p \times p^2$ or better

(c) $5p + 16$ 2

$15p + 10 - 10p + 6$

B2 for 5p + 16 oe
(B1 for any two terms correct from 15p, +10, –10p, +6)

[8]

7. (a) $pq - p^3$ 1

B1 oe accept $p \times q - p \times p^2$ or better

(b) $5p + 16$ 2

$15p + 10 - 10p + 6$

B2 for 5p + 16 oe
(B1 for any two terms correct from 15p, +10, –10p, +6

[3]

8. (a) $2p + 4q$ 2

B2 for 2p + 4q (accept 2 × p etc)
(B1 for 2p or 4q)

(b) $2y^2$ 1

B1 accept $2 \times y^2$ oe inc $2 \times y \times y$

(c) $3c + 4d$ 2

B2 for 3c + 4d (accept 3 × c etc)
(B1 for 3c or 4d)

(d) $8pq$ 1

B1 accept in any order but must not include × sign

[6]

9. (a) $p(p + 6)$ 2

B2 for p(p + 6) or p × (p + 6)
(B1 for p(ap + b) where a, b are numbers or p + 6 seen on it's own, or part of an expression)

(b) $x^2 + 3x - 28$ 2

$x^2 - 4x + 7x - 28$

M1 for 4 terms correct ignoring signs (e.g. x^2, 4x, 7x, 28) or 3 terms with correct signs (e.g x^2, – 4x, 7x , – 28)
A1 cao

[4]

10. (a) $x^2 + 3x - 28$ 2

$x^2 - 4x + 7x - 28$

M1 for 4 terms correct ignoring signs (e.g. x^2, 4x, 7x, 28) or 3 terms with correct signs (e.g x^2, – 4x, 7x, – 28)
A1 cao

(b) $y^4 + 2y^2$ 2

B2 cao
B1 for y^4 or $2y^2$

(c) $p(p + 6)$ 2

B2 for p(p + 6) or p × (p + 6)
(B1 for p(ap + b) where a, b are numbers or p + 6 seen on it's own, or part of an expression)

(d) $3x(2x - 3y)$ 2

B2 (B1 for $3(2x^2 - 3xy)$ or x(6x – 9y) or 3x(…))

[8]

11. (a) $x^2 - xy - xy + y^2$
$x^2 - 2xy + y^2$ 2

M1 for 3 terms correct with sign, or 4 terms correct ignoring signs, or $x^2 - 2xy - y^2$
A1 cao

(b) $aq - ac = d$
$aq = ac + d$
$\frac{ac + d}{a}$ 3

B1 $aq - ac$
M1 for $+ac$ or $\div a$ both sides
A1 oe
OR
B2 $q - c = \frac{d}{a}$
B1 $q = \frac{d}{a} + c$, $q = d + a + c$ *oe*

[5]

12. (a) $4y - 2y = 8 - 1$
3.5 2

M1 for $4y - 2y = 8 - 1$
A1 cao

(b) $2t + 10 + 13$
$2t + 23$ 2

M1 for $2t + 10$
A1 cao

[4]

13. (a) $3e + 2f$ 1

B1

(b) $4xy$ 1

B1

(c) $2a + 7b + 8$ 2

B2 for $2a + 7b + 8$
(B1 for either 2a or 7b)

[4]

14. (a) (i) x^9 1

B1 cao

(ii) p^5 1

B1 cao

(iii) $12\ s^6\ t^5$ 2

B2 cao
(B1 for two of 12, s^6, t^5 in a product)

(iv) q^{12} 1

B1 cao

(b) $6g - 3$ 1

B1 cao

(c) $x^2 + 3x + 2x + 6$ 2
$x^2 + 5x + 6$

B2 for $x^2 + 5x + 6$
(B1 for 3 out of 4 parts correct in working)

[8]

15. (a) 20 1

B1 cao

(b) $x(x + 4)$ 1

B1 cao

(c) (i) m^7 2

B1 cao

(ii) t^4

B1 cao

(d) $x^2 + 5x + 3x + 15 = x^2 + 8x + 15$ 2

M1 for 3 of 4 terms $x^2 + 5x + 3x + 15$, signs not needed
A1 for $x^2 + 8x + 15$

[6]

16. (a) $5p + 2q$ 2

B2
(B1 for $5p$ or $\pm 2q$)

(b) $y^2 - 5y$ 1

B1

(c) $6m + 8 + 3m - 15$ 2
$= 9m - 7$

M1 for correct expansion of at least one bracket
A1 for $9m - 7$

[5]

17. (a) $3x - 12 = x + 24$ 3
$2x = 36$
$= 18$

M1 for $3 \times (x - 4) = x + 24$ or $\frac{3(x-4)}{3} = \frac{x+24}{3}$

M1 for $3x - x = 24 + 12$ or $x - \frac{x}{3} = \frac{24}{3} + 4$ *oe*

A1 cao

(b) $16x^{12}y^4$ 2

B2 cao
(B1 for $2^4 x^{3\times4} y^4$, with one error allowed in powers)

[5]

18. (a) p^9 1

B1 cao

(b) q^5 1

B1 cao

(c) t^{12} 1

B1 cao

(d) $6m + 8 + 3m - 15$ 2
$= 9m - 7$

M1 for correct expansion of at least one term
A1 for 9m – 7

[5]

19. (a) $4a$ 1

B1 accept 4 × a, a × 4, a4

(b) $12b$ 1

B1 accept 12 × b, b × 12, b12

(c) $2a + 6b$ 2

B2 cao
(B1 for 2a or 6b seen)

(d) $x(x - 6)$ 2

B2 cao
(B1 for x (ax + b) where a, b are numbers not equal to 0 or x – 6 seen on its own, or as part of an expression)

[6]

20. (a) $4a - 2a + 5b + b = 2a + 6b$ 2

B2 cao
(B1 for 2a or 6b seen)

(b) $x(x - 6)$ 2

B2 cao
(B1 for x(ax + b) where a, b are numbers not equal to zero or x – 6 seen on its own, or part of an expression)

(c) $3x - 2x^3$ 2

B2 cao
(B1 for 3x or $2x^3$)

(d) $4x(3y + x)$ 2

B2 cao
(B1 for $2(6xy + 2x^2)$ or $4(3xy + x^2)$ or $x(12y + 4x)$ or $2x(6y + 2x)$ or $4x(\ \ ))$

[8]

21. (a) 5 1

B1 cao

(b) $4y = 11$
$= 2.75$ 2

M1 Movement of a term eg $4y = 12 - 1$

A1 2.75 or $2\frac{3}{4}$ or $\frac{11}{4}$ oe

(c) $3cd$ 1

B1 cao

(d) $3p - q$ 2

B2 for $3p - q$
(B1 for $3p$ or $\pm\ q$ or $3p \pm q$)

[6]

22. (a) p^{16} 1

B1 cao

(b) q^{10} 1

B1 cao

[2]

23. (a) $5d$ 1

B1 for 5d or 5 × d

(b) $2y^2$ 1

B1 for $2y^2$ or $2 \times y^2$

(c) $4 \times 3a - 4 \times 7$
$12a - 28$ 2

M1 for or 4 × 3a or 4 × 7 or 12a or 28
A1 for 12a – 28 cao

(d) t^3 1

B1 for t^3 (accept t^{1+2} oe)

(e) m^2 1

B1 for m^2 (accept m^{5-3} oe)

[6]

24. (a) $2a + 4c$ 1

B1 cao Accept 2(a + 2c)

(b) $½ \times ¼ \times (3)^2 = ½ \times ¼ \times 9 = 1.125$ 2

M1 for substitution: $½ \times ¼ \times 3^2$ oe
A1 1.125, $1\frac{1}{8}, \frac{9}{8}$ oe

(c) $x(x - 5)$ 2

B2 Accept x(x + –5)
(B1 for x(linear expression in x) or x-5 seen)

(d) $7x - 19 = 3x - 9$
$7x - 3x = -9 + 19$
$4x = 10$
2.5 3

M1 for expansion of brackets: 3x – 9
M1 for rearrangement of their two terms eg 7x – 3x = –9 + 19 or an indication of how this should be done for both variable and number term.
A1 for 2.5 Accept $\frac{5}{2}, \frac{10}{4}$ oe

[8]

25. (a) $20pq$ 1

B1 for 20pq oe

(b) d^4 1

B1 for d^4 cao

(c) $4 \times 3a - 4 \times 7$
$12a - 28$ 2

M1 for 4 × 3a or 4 × 7 or 12a or 28
A1 for 12a – 28 cao

(d) $4n + 6 + 3n + 3$
$7n + 9$ 2

M1 for 4n + 6 or 3n + 3
A1 for 7n + 9
B1 for t^3

(e) t^3 1

B1 for t^3
(accept t^{1+2} oe)

(f) m^2 1

B1 for m^2
(accept m^{5-3} oe)

[8]

26. (a) $2a + 4c$ 1

B1 2a+4c or 2(a +2c)

(b) $½ \times ¼ \times (3)^2 = ½ \times ¼ \times 9 = 1.125$
1.125 2

M1 for substitution: $½ \times ¼ \times 3^2$ oe
A1 1.125, $1\frac{1}{8}, \frac{9}{8}$, oe

(c) $x(x - 5)$ 2

B2 , accept x(x + –5)
(B1 for x(linear expression in x) or x-5 seen)

(d) $x^2 + 3x + 4x + 12$
$x^2 + 7x + 12$ 2

B2 for fully correct
(B1 for 3 out of 4 terms correct in working including signs, OR 4 terms correct, with incorrect signs).

(e) $(y + 3)(y + 5)$ 2

B2 for fully correct
(B1 for (y + a)(y + b) with one of ab = 15, a + b = 8)

[9]

27. (a) $3bc$ 1

B1 for 3bc (accept 3cb or bc3 or cb3 or 3 × b × c oe, but 7bc – 4bc gets 0)

(b) $2x + 5y$ 2

B2 for 2x+5y (accept x2 + y5 or 2 × x + 5 × y or x × 2 + y × 5)
[B1 for 2x or 5y seen; accept 2 × x, x2, 5 × y, y5, etc.]

(c) m^3 1

B1 cao

(d) $6np$ 1

B1 for 6np oe (accept 6pn, np6, pn6 but NOT 6 × p × n)

(e) $5(m + 2)$ 1

B1 for 5(m + 2) or 5(2 + m). Accept (5 – 0)(m + 2) or (3 + 2)(m + 2)

[6]

28. (a) $3bc$ 1

*B1 for 3*bc *(accept 3*cb *or* bc*3 or* cb*3 or 3* × b × c *oe, but 7*bc – *4*bc *gets no marks)*

(b) $2x + 5y$ 2

B2 for 2x + 5y (accept x2 + y5 or 2 × x + 5 × y or x × 2 + y × 5)
[B1 for 2x or 5y seen; accept 2 × x, x2, 5 × y, y5, etc.]

(c) m^3 1

B1 cao

(d) $6np$ 1

B1 for 6np oe (accept 6pn, np6, pn6 but NOT 6×p×n)

[5]

29. (a) $4x$ 1

B1 for 4x (accept 4 × x, x × 4, x4)

(b) y^3 1

B1 cao

(c) $2x + 8y$ 2

B2 for 2x + 8y oe
[B1 for 2x or 8y seen]
{Note: –8y seen with no working gets B0 4x + 2x = 6x gets B0}

[4]

30. (a) $2x + 8y$ 2

B2 for 2x + 8y oe
[B1 for 2x or 8y seen]
{Note: –8y seen with no working gets B0
4x + 2x = 6x gets B0}

(b) $2c + 4r$ 2

B2 for 2c + 4r oe
[B1 for 2c or 4r or seen]
Ignore any Left Hand Side = 2c + 4r
{Note: ignore units or use of 'p'}

[4]

31. (a) a^3 1

B1 for a^3 cao

(b) $5 \times 3x - 5 \times 2$
$15x - 10$ 1

B1 for 15x – 10 cao

(c) $3y \times y + 3y \times 4$

$3y^2 + 12y$ 2

M1 for $3y \times y + 3y \times 4$ or $3y^2 + a$ or $3y^2 + ay$ or $b + 12y$ or $by^2 + 12y$ where a ,b are integers, and can be zero
A1 for $3y^2 + 12y$ or $3 \times y^2 + 12 \times y$
NB: If more than 2 terms in expansion MOA0

(d) $2x - 8 + 3x + 6$

$5x - 2$ 2

M1 for $2 \times x - 2 \times 4$ or $2x - 8$ or $3 \times x + 3 \times 2$ or $3x + 6$
A1 for $5x - 2$ cao

(e) $x^2 + 4x - 3x - 12$

$x^2 + x - 12$ 2

M1 for 4 terms correct with or without signs, or 3 out of no more than 4 terms, with correct signs (the terms may be in an expression or table) or $x(x - 3) + 4(x - 3)$ or $x(x + 4) - 3(x + 4)$ or
A1 for $x^2 + x - 12$ cao

[8]

32. (a) $x > -2$ 2

$5x > 2 - 12$
$x > -10/5$

M1 for process to separate x and non -x terms
A1 cao

(b) $x^2 - 2x - 24$ 2

$x^2 - 6x + 4x - 24$

M1 for at least 3 correct terms
A1 cao

[4]

33. (a) $4m$ 1

B1

(b) $8p + 5q$ 2

$5p + 3p - 2q + 7q$

B2 (B1 for either 8p or 5q seen)
(NB: accept $8 \times p$, $p8$ for $p \times 8$ etc)

[3]

34. $9a + 3b$ 2

B2 for 9a + 3b
(B1 for 9a or 3b seen)

[2]

35. $y^2 + 8y + 15$ 2

$y^2 + 5y + 3y + 15$

M1 for at least 3 of 4 terms correct
A1 cao

[2]

36. $5x + 8y$ 2

B2 (B1 for 5x or 8y seen)

[2]

37. 7e + 6f 2

B1

[1]

38. c^5

B1 (accept c^5x^4)

[1]

39. $x^2 + 12x + 35$ 2

$x^2 + 5x + 7x + 35$

M1 for 3 or 4 terms correct, with no extra terms.
Accept $x \times x + 5 \times x$ etc..
A1 cao

[2]

40. $x^2 - 5x - 36$ 2

$x^2 + 4x - 9x - 36$

M1 for 3 or 4 correct terms or 4 correct terms ignoring signs or $x^2 - 5x + c$, $c \neq 0$
A1 cao

[2]

41. (a) $2y^2$ 1

B1 accept $2 \times y^2$ or $2 \times y \times y$

(b) $3c + 4d$ 2

B2 for $3c + 4d$ (accept $3 \times c$ etc)
(B1 for $3c$ or $4d$ or $3c4d$)

[3]

42. $12a + 3b$ 2

B2 for $12a + 3b$
(B1 for $12a$ or $3b$)

[2]

43. (a) $4x = 16$
4 2

M1 for $4x = 19 - 3$ oe or $19 - 3 \div 4$
A1 cao

(b) $2t + 10 + 13$
$2t + 23$ 2

M1 for $2t + 10$
A1 cao

[4]

44. (a) (i) x^9 2

B1 cao

(ii) p^5

B1 cao

(b) $6g - 3$ 1

B1 cao

[3]

45. E

[1]

46. E

[1]

47. A

[1]

48. $6c + c + 2d + 5d$

$7c + 7d$ 2

B2 for $7c + 7d$ oe (accept $c7 + d7$, $7 \times c + 7 \times d$ or $c \times 7 + d \times 7$)
[B1 for $7c$ or $7d$ oe seen]

[2]

49. (a) $cd + 4c$ 1

B1 for $cd + 4c$ oe

(b) $3x + 15 + 2x - 2$
$5x + 13$ 2

B1 for $3x + 15$ or $2x - 2$
B1 cao

[3]

50. (a) $5x - y$ 2

B2 for $5x - y$ cao
(B1 for $5x + ny$ or for $nx - y$)

(b) $\frac{1}{2y}$ 2

B2 for $\frac{1}{2y}$ *cao*

(B1 for $\frac{2}{4y}$ *or for* $\frac{x}{2xy}$*)*

(c) $x - 3$ 1

B1 for x – 3 cao

[5]

51. E

[1]

52. D

[1]

53. (a) $7e - 6f$ 2

B2 (B1 for 7e or –6f seen)

(b) $6c - 4$ 1

B1 (accept 6 × c – 4, c6 – 4 or equivalent expansion)

(c) $x(y + 3)$ 1

B1

[4]

54. E

[1]

55. A

[1]

56. (a) $6x + 9 + 2x + 2 = 8x + 11$ 2

M1 for 3 × 2x + 3 × 3 or 2 × x + 2 × 1 or 6x + 9 or 2x + 2 or 8x or 11
A1 for cao

(b) $y^2 + 4y - 3y - 12$
$y^2 + y - 12$ 2

M1 for 3 out of 4 terms of y × y + 4 × y – 3 × y – 3 × 4 correct including signs, or 4 terms excluding signs
A1 for $y^2 + y - 12$ or $y^2 + 1y - 12$ cao

[4]

1. The first part to this question was usually well attempted, with most candidates gaining the marks. The common errors were in giving $8g^2$ and $7rp$ as the answers, respectively. The second part was also well answered, but the weaker candidates spoilt their answer by writing it as $-5y$. Whilst most candidates could multiply out the brackets, very few correctly gave the final term as +15. Only partial credit was therefore earned. The collection of terms also caused many candidates some difficulty, far more so than the expansion of the brackets.

2. Part (i) was answered correctly by many candidates. Common incorrect responses were 'p^{14}' and '$2p^9$'. Part (ii) was answered less well with about half of the candidates giving the correct answer. Some added the indices, others attempted to divide them.

3. In part (b) many candidates were unable to combine like terms. They introduced indices where there weren't any, or made errors with minus signs. In part (b) it was inevitable that the minus sign outside the second bracketed expression caused many problems. Part (a) was rarely answered correctly; there was clear evidence that candidates simply did not understand what "factorise" meant.

4. This was another good source of marks for those candidates who had a good understanding of the rules of indices. Although all the usual misconceptions were seen, for example p^{14} and $x^{\frac{8}{3}}$, most candidates gained marks in this question.
Although the brackets in part (b) were usually expanded correctly it was disappointing to see some candidates 'simplifying' the correct answer to a single term.

5. Both parts of this were standard. The major error in part (a) was in the expansion of the second bracket to give $4x - 6$ instead of the correct $4x + 6$

6. Questions on algebra are often not well attempted, particularly by the less able candidates, so it was pleasing that many gained reasonable marks in this question. In part (a), more than half answered (i) correctly and one third answered (ii) correctly. Many candidates gained one mark for a partially correct expression. In part (b), 60% of candidates expanded the brackets correctly in (i) and 40% were successftil in (ii). A connnon incorrect answer in (ii) was $pq - 2p^2$. In part (c), almost 70% of candidates gained at least one mark but only 15% gave a correct final answer. Mistakes were often made in the expansion and the most common error was for candidates to write –6 instead of +6.

7. This question was well answered by the majority of candidates, 87% were able to expand the single bracket in (a) and 64% were able to correctly expand and collect terms in part (b).

8. **Foundation Tier**

Many Foundation candidates find algebra difficult and it was not unusual to see some or all of this question not attempted. Success was most likely on parts (a) and (b), although the negative signs sometimes caused problems. Centres should be aware that candidates are penalised if a correct answer is then incorrectly simplified. For example, in part (a), $2p + 4q = 6pq$ would score only one mark. In part (d), an expression containing a multiplication sign received no credit.

Intermediate Tier

This question proved to be a good discriminator. In part (a) $2p - 3q$ was quite often seen. Part (b) proved to be the most difficult for the less able students. Many offered 3 as their answer. In part (d) $3c - 4d$ was a common incorrect response. In part (d) many candidates failed to deal with the numerical part of the expression, hence $4p2q$ and $6pq$ were regularly seen.

9. More candidates appeared to understand what was required in a factorisation, but many weaker candidates wrote $p(p + 6p)$ or $7p^2$. Most candidates expanded the brackets to get four terms, though either the numerical term or negative signs were incorrect. Some simplified $-4x + 7x$ as $-3x$.

10. This question was generally answered well by the majority of the candidates.
In part (a), some candidates got a little confused with their multiplication and addition- a typical error was $(x + 7)(x – 4) = x^2 + 7x – 4x – 11$. In part (b), some candidates spoilt there answers by writing $y^4 + 2y^2 = 2y^6$, and in part (d), some did not completely factorise the expression.

11. **Intermediate Tier**

This question was not well attempted. In part (a) candidates jumped all too readily into the misconception that the answer was merely the square of the two terms: $x^2 – y^2$. Few even attempted to derive the four necessary terms.
In part (b) it was disappointing to find so many candidates incorrectly multiplying out the bracket on the left hand side, giving the result as $aq – c$. Even the ablest candidates were unable to perform manipulation of individual terms, with minus signs commonly misplaced. Algebraic manipulation is a significant weakness.

Higher Tier

In part (a) most candidates scored at least one mark. The most common errors were $x^2 – y^2$ and $x^2 – 2xy – y^2$ with $x^2 + y^2$ also being popular.
In part (b) the most common correct approach seen was to divide both sides by a first and then add c to both sides. This was seen many times. The candidates who expanded the brackets first seemed to be less successful in carrying on scoring full marks. Some candidates carried out the operations in the wrong order, adding c to both sides and then dividing by a to get $q = \frac{d + c}{a}$

12. The proportion of candidates using trial and improvement methods to solve equations appears to have increased gain this year. Numerical methods were common, and frequently resulted in the wrong answer. These methods are *not* credited in terms of working. In part (a) there were many trial and improvement methods seen. The most common error for candidates who attempted some manipulation was not changing the signs when they did so, arriving at $6y = 9$. A significant number arrived at $2y = 7$, but could not proceed further as the answer was not an integer. In part (b) nearly half the candidates obtained the correct answer. The most common error was incorrect expansion of the brackets to $2t + 5$, with many answers of $2t+ 18$ seen.

13. Simplifying the expression in part (a) proved to be straightforward for many candidates. A common incorrect response was $e^3 + f^2$. Slightly fewer were successful in part (b). It was not uncommon to see the answer left as $5xy – xy$. In part (c) some candidates mixed up the signs when gathering like terms and some correct answers were spoilt when candidates continued with further incorrect working, e.g. $2a + 7b + 8 = 17ab$.

14. In part (a) more than 70% of candidates answered (i) correctly. Common incorrect answers were a^{12} and $2a^7$. Candidates were less successful in (ii) with $p^{2.6}$ seen often. The answer given in (iii) was usually a product but common errors were to add 3 and 4 or to multiply the indices so that $7s^6t^5$and $12s^8t^6$ were common incorrect answers. Almost 50% of candidates expanded the bracket correctly in part (b). $5g - 3$ and $6g - 1$ were common incorrect answers and $6g$ was sometimes written as $3 \times 2g$. Candidates found part (c) difficult with less than 30% gaining full marks. Many could not start and simply added to give $2x + 5$. For those that did start, common errors were $x \times x = 2x$ and $2 \times 3 = 5$.

15. Three quarters of candidates answered part (a) correctly. It was disappointing that only 20% of candidates could factorise $x^2 + 4x$ correctly in part (b). Some tried to use two brackets. Many had no idea of what was required. In part (c), more than 60% of candidates answered (i) correctly. A common incorrect answer was m^{10}. Slightly fewer candidates were successful in (ii). It was pleasing that 40% of candidates managed to obtain three or four correct terms in part (b) but mistakes were often made in simplifying the expression. A common error in the expansion was a final term of 8 instead of 15. Common incorrect answers were $x^2 + 15$ and $2x + 8$.

16. In part (a) the minus sign presented problems for some, but usually full marks were gained. In part (b) $y^2 - 5$ was by far the most common (incorrect) response. Part (c) was not well done, with most candidates earning just one mark for multiplying out one bracket correctly. Again simple arithmetic errors cost some marks, with $2 \times 4 = 6$ and $3 \times 5 = 12$ typical of unforced errors, or poor adding of terms when simplifying.

17. Part (a) was done well by most candidates. When errors occurred these were most often seen in the expansion of the brackets, where candidates often forgot to multiply the 4 by the 3. Many candidates had difficulty with part (b). 2, 8, 32 or 2^4 were frequently seen in place of 16, and x^4 or x^7 were seen in place of x.

18. All parts of this question tested algebraic processes. Most candidates were successful in showing that they could do this. The most common error was to write the answer to $(t^4)^3$ as t^7. In part (d), some candidates went on to multiply the 2 expansions rather than add them.

19. Algebra is not the favourite topic for foundation candidates but they are getting better at it. Part (a) was almost always correct but part (b) was less successful. Part (c) had a similar success rate to part (b) and many candidates got a complete correct response. Many lost a mark by failing to include a + sign between two correct terms. However equally many gained a mark for either 2a or 6b contained within their expression whilst some candidates achieved the correct answer and then oversimplified it to 12 ab or 8ab.

20. As might be expected, part (a) was answered with the most success. Some candidates, though, confused the signs and gave answers such as $6a - 4b$, $2a - 6b$ or $6a + 6b$ and some oversimplified the correct answer to 8ab. It was disappointing that many candidates could not factorise $x^2 - 6x$ correctly in part (b). Some tried to use two brackets. Many, though, did not understand the meaning of 'factorise'. In part (c) many candidates obtained $3x$ or $3 \times x$ as the first term of the expansion but errors were frequently made with the second term. $x \times 2x^2 = 3x^2$ was a common error. Sometimes good work was spoiled in an attempt to simplify further. Part (d) was not answered well. Those with the right idea often gave a partially factorised expression as the answer and gained 1 mark.

21. Part (a) was well answered. In part (b) the common error was to add the 1 to 12 getting 13. Many were confused with part (c), with attempts to multiply the terms very common. In part (d) $3p$ was usually seen, but problems occurred with the q. These usually concerned the $3 - 4$, where these were added to give 7, or left unprocessed as $+-3q$, $+-4q$, or $+-q$.

22. Both parts of this question were well answered with only occasional sporadic errors, the most common error being $2p^{16}$

23. As might be expected, part (a) was answered with the most success. The most common incorrect answer was d^5. By comparison, part (b) was answered poorly. Many candidates gave the answer as y^4, $2y^4$ or $4y$. Some, though, did not attempt it. Just over one quarter of candidates managed to expand $4(3a - 7)$ correctly in part (c). Some only multiplied one term inside the bracket by 4, most often resulting in $12a - 7$. These candidates gained 1 mark as did the many who showed either $4 \times 3a$ or 4×7. There were some who, having got $12a - 28$, then decided that this answer could be simplified. More than half of the candidates got either part (d) or part (e) correct but fewer than expected got both parts correct. A common incorrect answer in (d) was t^2. This could have arisen because candidates did not understand that t meant t^1 or because they did know this but multiplied the indices. Other common incorrect answers were $2t^2$ and $3t$. In (e) common incorrect answers were m^8 and $m^{\frac{5}{3}}$.

24. In part (a) many candidates were able to combine one of the letters, but rarely both. Weaker candidates frequently spoilt their answer by incorrect simplification, for example $4a + 2a = 6a$, and $2a + 4c = 6ac$. In part (b) there was little understand of formulae. Many added the three pats of the formulae, whilst squaring was almost arbitrary. Weaker candidates did not know what to do with the $\frac{1}{2}$. Even with an answer as short as 1.125 there were instances of candidates rounding off this answer to 1 d.p. Part (c) was done well by those candidates who understood what was meant by "factorise". A few candidates gained a mark for multiplying out the bracket in part (d), but most failed to gain any marks. Algebraic methods were very confused, with few manipulating the terms correctly.

25. This question was done well by the majority of the candidates. In part (a), most candidates were able to write down the answer $20pq$. Common incorrect answers here were $4p5q$, 9pq, $20p^2$ and $20q^2$. In part (b), the vast majority of candidates were able to write down the answer d^4. A very common incorrect answer here was $4d$. In part (c), about half the candidates were able to gain both marks. Common incorrect answers here were $12a - 7$, $7a - 28$ and $12a - 21$. In part (d), about three quarters of the candidates were able to score both marks and many that didn't were able to score a mark for either $4n + 6$ or $3n + 3$. Common incorrect answers here were $(4n + 6) + (3n + 1) = 7n + 7$ and $(4n + 3) + (3n + 3) = 7n + 6$ (each gaining 1 mark); and $(4n + 3) + (3n + 1) = 7n + 4$ (for 0 marks). A surprising number of candidates multiplied the expressions $(4n + 3) \times (3n + 3)$ instead of adding them. Parts (e) and (f) were generally done well. Common incorrect answers here were $(t \times t^2 =) t^2$ and $(m^5 \div m^3 =) m^{5/3}$ or m^{15}.

26. This question gave students the opportunity to display their skills of algebraic manipulation and of algebraic substitution.
Usually candidates were successful on part (a), although there were many wrong answers, mainly from a misunderstanding of the relationship of the sign in a term with the term it acted on.

Part (b) had many cases of poor substitution, where, for example, $\frac{1}{4} \times 3^2$ was evaluated as $\left(\frac{1}{4} \times 3^2\right)$

Parts (c), (d) and (e) were all well done. The most common error in (c) was the difference of 2 squares misunderstanding as $(x - 5)(x + 5)$ or $(x - 2.5)(x + 25)$. The clumsy, but correct was awarded both marks.

On (d), the characteristic $x^2 + 7x + 7$ was occasionally seen and on (e) the 'factorisation' $y(y + 8) + 15$

27. This question proved to be a good discriminator. 68% of candidates gave a correct and fully simplified answer to the first part of the question. A significant proportion only completed a partial simplification and left the answer as $7bc - 4bc$. In part (b), candidates who showed the collection of like terms in their working seemed to gain more marks. Many candidates appeared confused about signs and so gave $6x$ or $-5y$ terms. Answers to part (c) were split mostly between $3m$ and m^3 with about two thirds of candidates giving the correct response. Only occasionally was it not possible to distinguish whether the candidate had written $m3$ or m^3. The answer $5np$ was common in part (d). Sometimes candidates left multiplication signs in their answers. Only about 10% of candidates could factorise the expression given in part (e) correctly. $15m$ and $5(m + 10)$ were common incorrect answers seen.

28. This was a good first question with virtually all candidates able to pick up some marks. Errors made were usually, not fully simplifying in part (a) leaving an answer of $7bc - 4bc$. In part (b), $6x \pm 5y$ was the most common incorrect answer offered but $7xy - 4xy = 3xy$ was seen several times. $3m$ and $5np$ were the most common errors made in parts (c) and (d) respectively.

29. In part (a), the majority of candidates gained the mark, although answers of $12x$ and 4 were often seen. $3y$ was the most common incorrect answer seen in part (b) and only about one half of the candidature gave a correct answer of y^3.

Only 40% of candidates gained full marks in part (c) of this question; the most common error being either to add the two terms in x to give $6x$ or to write $-8y$ instead of $+8y$. Some candidates, in their working, wrote $2x + 8y$ and then gave an answer of $10xy$ or similar. Even though the correct answer has been seen, in these cases just 1 of the 2 marks is awarded.

30. Part (a) was answered very well by most candidates. For some, the signs caused a problem with $2x - 8y$ being the most common incorrect answer. Most candidates were also successful in part (b). Some, though, wrote down $2c + 4r$ in their working and then made this equal to $6cr$, or even $8cr$, and lost a mark. A few candidates gave the answer as $c^2 + r^4$. Many candidates did not know the difference between an expression and an equation but they were not penalised for this.

31. Parts (a) and (b) were generally well answered. The most common incorrect answer in (a) was 3a. In part (c) Most candidates managed to expand $3y \times y$ correctly and simplify to $3y^2$ but a few did not multiply $3y$ by 4 and just wrote 12 rather than $12y$. Hence $3y^2 + 12$ was the most common error seen. Expansion of both brackets in part (d) did not usually cause problems although a few multiplied the brackets together. Simplification caused more difficulties with the –8 term added leading to $5x + 14$ or a common arithmetic slip giving $2x + 3x = 6x$ Again, in part (e) the expansion of brackets was often successfully tackled but simplification led to more errors, caused usually by difficulties dealing with the negative terms. In the expansion, 4 and –3 were added rather than multiplied to give 1 leading to $x^2 + x + 1$ or just $x^2 + 1$. $–3x$ and $4x$ were sometimes combined to give $–x$ and a common mistake was to ignore the – sign and add these 2 terms to give $x^2 + 7x – 12$.

32. In part (a) the majority of candidates were able to separate the x terms correctly. However, the final accuracy mark was often not gained because candidates gave their final answer to this inequality as either $x = –2$ or just –2.
Part (b) was generally well done. Common errors occurred when candidates either failed to simplify the x terms incorrectly or wrote the independent term as + 24.

33. There was a mixed response to this question.
In part (a) many responded with the correct answer but a significant number responded 4^m or m^4.
A large number of candidates scored one mark in (b) by writing $8p$ but many responded with $8p – 5q$, $13pq$, $8p + 9q$ or $8p + 7q – 2q$.

34. **Foundation Tier**

Most of the candidates had some idea of adding and subtracting algebraic terms but nearly two thirds of the candidates made some error along the way. The most common incorrect response was to write down $9a$, $3b$ without joining them together to form a single expression, $9a – 3b$, $9a + 7b$ and $9a – 7b$ were common incorrect responses.

Intermediate Tier

This question was answered successfully by over 60% of candidates and all but 10% failed to score at least one mark, $9a – 3b$ or $12ab$ being the usual errors.

35. A straightforward question that was answered correctly by the majority of candidates. Most errors arose from adding instead of multiplying the 3 and 5 to give the final term in the expression as 8 rather than 15. A minority of candidates gave the answer simply as $y^2 + 15$ and thus scored no marks.

36. Over half the candidates were able to score one mark by writing either $5x$ or $8y$ somewhere in their working or in the answer space, with over half of these candidates scoring both marks. Many took the unnecessary step of trying to merge their results into a single term ($13xy$) and it was not uncommon to see '$14y$' or '$14xy$' on the answer line. Other common incorrect responses which scored only one mark were $5x8y$, $5x - 8y$ and $8y - 5x$.

37. Disappointingly only just over 50% gained the mark.
Answers of $11e + 6f$, $13ef$ and $7e - 6f$ were often seen.

38. Disappointingly only just over 50% gained the mark.

39. Nearly a half of the candidates scored at least one mark for finding 3 or 4 correct terms, however poor algebraic manipulation often restricted further progress. The sum of 7 and 5 was seen on many occasions instead of the product. Answers of $7x + 5x = 12x$, $2x + 12$, $x^2 + 35$ and $x^2 + 12$ were common mistakes made by weaker candidates.

40. Only 10% of candidates failed to gain any marks for this question; just under 70% of candidates were able to gain full marks on this routine question. Common errors included simplifying $-9x + 4x$ to $-13x$, writing $2x$ instead of x^2 and giving +36 instead of –36.

41. Part (a) was disappointingly answered with an answer of 3 being the most common response. In part (b) candidates were more successful in gaining at least one mark for quoting $3c$ and/or $4d$ either in their working or their answer. Wrong answers of $7c - 4d$, $3c - 4d$ and $7c + 4d$ were common.

42. No report available.

43. In part (a) very few failed to solve this simple equation correctly. Many successfully used trial and improvement methods, however embedded answers, for example $4 \times 4 + 3 = 19$ were often contradicted on the answer line with answers of 19 or 16. In these cases no marks were scored. In part (b), many candidates failed to expand the bracketed term correctly being distracted by the additional term of 13. Common wrong answers included $2t + 18$ and $2t + 36$

44. Parts (i) and (ii) of part (a) were usually correctly answered. In part (b) answers of $6g - 1$, $3 \times 2g - 1$ and $3g$ (after getting $6g - 3$) were often seen.

45. No Report available for this question.

46. No Report available for this question.

47. No Report available for this question.

48. A correct answer of $7c + 7d$ or $7(c + d)$ was the most popular response to this question. A number of candidates, predictably, tried to further simplify $7c + 7d$ to $14cd$ and sometimes to $7cd$, and so lost one of the two marks.

One must question whether candidates giving answers of $7c^2 + 7d^2$, $7c^2 + 6d^2$ and $5c + 3d$, which were the most common incorrect attempts seen, were actually entered at the correct level.

49. Many candidates were clearly confused by the letter outside of the bracketed expression rather than a number in part (a). $cd + 4$ and $4cd$ were the most likely incorrect answers to be seen. In part (b), many candidates were able to score one mark for the correct expansion of either of the bracketed terms, but a great many failed to do even this with $3x + 5 + 2x - 1$ leading to an answer of $5x + 4$ and sometimes $5x + 6$ in many cases. Some candidates quoted the correct answer of $5x + 13$ but then gave $18x$ as their answer by further attempts to simplify. This loses one of the two marks.

50. Part (a) was the most successful though a surprising number of candidates incorrectly oversimplified their correct answer. Part (b) and (c) were not well answered though some candidates gained partial credit in (b) for writing $\frac{x}{2xy}$ or $\frac{2}{4y}$.

51. No Report available for this question.

52. No Report available for this question.

53. This algebra question was quite well answered. Almost 90% of candidates were awarded some credit for their answers to part (a). Common incorrect answers seen included 7e and 7e +6f. These could be awarded 1 mark for one correct term. The second part of the question was correctly answered by 84% of candidates whilst the success rate in the last part was 65%. In part (c) common incorrect answers included $3x^2y$, $4xy$ and $x(y + 2x)$.

54. No Report available for this question.

55. No Report available for this question.

56. Only about one in three candidates scored full marks in this question.

In part (a) most candidates were able to expand at least one of the expressions "3(2x + 3)" and "2(x + 1)" successfully to gain 1 mark. However, it is disappointing to report that it was common to see candidates then attempting to multiply "6x + 9" and "2x + 2" or incorrectly combine them in some other way. Perhaps surprisingly, just as many candidates were successful in part (b) as in part (a). In this part of the question, in cases where a candidate could not be awarded both marks, examiners were often able to give one mark for either 3 out of 4 correct terms in their expansion or for 4 terms with some incorrect signs.