Name: _____

GCSE (1 – 9)

Expanding and Factorising

Instructions

- Use **black** ink or ball-point pen.
- Answer all Questions.
- Answer the Questions in the spaces provided
  – *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

Information

- The marks for each Question are shown in brackets
  – *use this as a guide as to how much time to spend on each Question.*

Advice

- Read each Question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every Question.
- Check your answers if you have time at the end

1 (a) Expand $7(2x + 7)$

$$14x + 49$$
(1)

(b) Factorise $3y + 12$

$$3(y + 4)$$
(1)

(Total for Question 1 is 2 marks)

2 (a) Expand $5a(a - 6)$

$$5a^2 - 30a$$
(2)

(b) Solve $4(b + 2) = 24$

$$4b + 8 = 24$$
$$4b = 16$$
$$b = 4$$

$b =$ 4
(2)

(Total for Question 2 is 4 marks)

3 (a) Factorise fully $12m + 8m^2$

$$4m(3 + 2m)$$
(2)

(b) Solve $3(n - 5) = 27$

$$3n - 15 = 27$$
$$3n = 42$$
$$n = 14$$

$n =$ 14
(2)

(Total for Question 3 is 4 marks)

4 (a) Expand $8(3s - 2)$

$$24s - 16$$
(1)

(b) Factorise $4t + 20$

$$4(t + 5)$$
(1)

(Total for Question 4 is 2 marks)

5 (a) Factorise fully $5a^2b + 15ab^2$

$$5ab(a + 3b)$$
(2)

(b) Solve $6(c - 8) = 42$

$$6c - 48 = 42$$
$$6c = 90$$
$$c = 15$$

$c =$ _____ 15
(2)

(Total for Question 5 is 4 marks)

6 (a) Factorise $18x + 24$

$$6(3x + 4)$$
(1)

(b) Expand $3(2y - 4)$

$$6y - 12$$
(1)

(Total for Question 6 is 2 marks)

7 (a) Expand $p(p-3)$

$$p^2 - 3p$$
(1)

(b) Factorise $16q + 8$

$$8(2q + 1)$$
(1)

(Total for Question 7 is 2 marks)

8 (a) Factorise fully $6x^2 - 4xy$

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

(b) Solve $2(w-4) = 13$

$$2w - 8 = 13$$
$$2w = 21$$
$$w = \frac{21}{2}$$

$w = \dfrac{21}{2}$ or 10.5
(2)

(Total for Question 8 is 4 marks)

9 (a) Factorise $x^2 - 9x$

$$x(x - 9)$$
(1)

(b) Expand $6(5y + 1)$

$$30y + 6$$
(1)

(Total for Question 9 is 2 marks)

10 (a) Expand $3(5x - 8)$

$$15x - 24$$
(1)

(b) Factorise $18y + 15$

$$3(6y + 5)$$
(1)

(Total for Question 10 is 2 marks)

11 (a) Expand $7(2h - 3)$

$$14h - 21$$
(1)

(b) Expand and Simplify $4(g + 5) + 3(g - 2)$

$$4g + 20 + 3g - 6$$

$$7g + 14$$
(2)

(Total for Question 11 is 3 marks)

12 (a) Factorise fully $7xy + 21x$

$$7x(y + 3)$$
(2)

(b) Solve $6(p + 3) = 42$

$$6p + 18 = 42$$
$$6p = 24$$
$$p = 4$$

$p = $ _____ 4 _____
(2)

(Total for Question 12 is 4 marks)

13 (a) Expand $a(a + b)$

$$a^2 + ab$$

(1)

(b) Factorise $15y - 6$

$$3(5y - 2)$$

(1)

(Total for Question 13 is 2 marks)

14 (a) Expand $9x(3y - 8)$

$$27xy - 72x$$

(2)

(b) Expand and Simplify $7(t - 4) + 5(t - 2)$

$$\cancel{7t - 28 + 5t - 10}$$

$$7t - 28 + 5t - 10$$

$$12t - 38$$

(2)

(Total for Question 14 is 4 marks)

15 (a) Factorise fully $30x^3 + 12x$

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

(2)

(b) Solve $5(f - 2) = 22$

$$5f - 10 = 22$$
$$5f = 32$$
$$f = \frac{32}{5}$$

$$f = \frac{32}{5} \text{ or } 6.4$$

(2)

(Total for Question 15 is 4 marks)

16 (a) Expand $x(8x + 1)$

$$8x^2 + x$$
(1)

(b) Factorise $18 + 63y$

$$9(2 + 7y)$$
(1)

(Total for Question 16 is 2 marks)

17 (a) Expand $2x^2(4x - 9)$

$$8x^3 - 18x^2$$
(2)

(b) Expand and Simplify $6(y + 3) - 5(y - 4)$

$$6y + 18 - 5y + 20$$

$$y + 38$$
(2)

(Total for Question 17 is 4 marks)

18 (a) Factorise fully $30a^2 + 40ab$

$$10a(3a + 4b)$$
(2)

(b) Solve $3(g + 9) = 21$

$$3g + 27 = 21$$
$$3g = -6$$
$$g = -2$$

$g =$ -2
(2)

(Total for Question 18 is 4 marks)

19 (a) Expand $n(5n + 1)$

$$5n^2 + n$$
(1)

(b) Factorise $18m + mn$

$$m(18 + n)$$
(1)

(Total for Question 19 is 2 marks)

20 (a) Expand $3x(7x^2 - y)$

$$21x^3 - 3xy$$
(2)

(b) Expand and Simplify $3(6y + 5) - 2(4y - 1)$

$$18y + 15 - 8y + 2$$

$$10y + 17$$
(2)

(Total for Question 20 is 4 marks)

21 (a) Factorise fully $18a^2bc + 30abc^2$

$$6abc(3a + 5c)$$
(2)

(b) Expand and Simplify $4(2y - 7) - 3(5y - 3)$

$$8y - 28 - 15y + 9$$

$$-7y - 19$$
(2)

(Total for Question 21 is 4 marks)