

Name: _____

GCSE (1 – 9)

Simplifying Algebra

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 Simplify $3x + 4x - 2x$

$$7x - 2x$$

$$5x$$

(Total for question 1 is 1 mark)

2 Simplify $3m + 3m$

$$6m$$

(Total for question 2 is 1 mark)

3 Simplify $n + n + n$

$$3n$$

(Total for question 3 is 1 mark)

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

$$abc$$

(1)

(b) Simplify $5p - 2p$

$$3p$$

(1)

(c) Simplify $\frac{6h}{3}$

$$2h$$

(1)

(Total for question 4 is 3 marks)

5 Simplify $k + k + 8$

$$\underline{2k + 8}$$

(Total for question 5 is 1 mark)

6 (a) Simplify $4 \times 3x$

$$\underline{12x}$$

(1)

(b) Simplify $7a - 3a + 6a$

$$4a + 6a$$

$$\underline{10a}$$

(1)

(Total for question 6 is 2 marks)

7 Simplify $(8g) + 6h - (3g) + h$

$$\underline{5g + 7h}$$

(Total for question 7 is 2 marks)

8 (a) Simplify $3 \times b \times 9$

$$\underline{27b}$$

(1)

(b) Simplify $(2x) - 3y - (6x) - 4y$

$$\underline{-4x - 7y}$$

(2)

(Total for question 8 is 3 marks)

9 Simplify $8c + 3d - c + 2d$

$$7c + 5d$$

(Total for question 9 is 2 marks)

10 (a) Simplify $f + f + f + f + f$

$$\frac{5f}{(1)}$$

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

$$\frac{7a + 5b}{(2)}$$

(Total for question 10 is 3 marks)

11 (a) Simplify $2a \times 3b$

$$\frac{6ab}{(1)}$$

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

$$\frac{4p^2}{(1)}$$

(c) Simplify $\frac{7x + 5x}{4}$

$$\frac{12x}{4}$$

$$\frac{3x}{(1)}$$

(Total for question 11 is 3 marks)

12 Simplify $(11c) - 8d + (5c) - d$

$$16c - 9d$$

(Total for question 12 is 2 marks)

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

$$12ab$$

(1)

(b) Simplify $(3x) + 2y + (6x) - y$

$$9x + y$$

(2)

(Total for question 13 is 3 marks)

14 (a) Simplify $a \times b \times 3$

$$3ab$$

(1)

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

$$y^3$$

(1)

(c) Simplify $\frac{10d}{d}$

$$10$$

(1)

(Total for question 14 is 3 marks)

15 (a) Simplify $a \times 2 \times 5$

$$\frac{10a}{(1)}$$

(b) Simplify $b \times b$

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

(c) Simplify $\frac{2y + 6y}{2}$

$$\frac{8y}{2}$$

$$\frac{4y}{(1)}$$

(Total for question 15 is 3 marks)

16 (a) Simplify $2t \times 7s$

$$\frac{14st}{(1)}$$

(b) Simplify $7a + 4b - 3a - 5b$

$$\frac{4a - b}{(2)}$$

(Total for question 16 is 3 marks)

17 (a) Simplify $6f - f$

$$\frac{5f}{(1)}$$

(b) Simplify $7x^2 - 3x + 3x^2 + 6x$

$$\frac{10x^2 + 3x}{(2)}$$

(Total for question 17 is 3 marks)

18 Simplify $2 \times n \times 6 \times m$

$$12mn$$

$$\underline{12mn}$$

(Total for question 18 is 1 mark)

19 (a) Simplify $6j \times 5k$

$$\underline{30jk}$$

(1)

(b) Simplify $7a - 6b + 5a + 4b$

$$\underline{12a - 2b}$$

(2)

(Total for question 19 is 3 marks)

20 (a) Simplify $4n - 3n + 5n$

$$n + 5n$$

$$\underline{6n}$$

(1)

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

$$\underline{3p^2}$$

(1)

(c) Simplify $5 + 2a + 7b - 6a + b$

$$\underline{5 - 4a + 8b}$$

(2)

(Total for question 20 is 4 marks)

21 (a) Simplify $a^2 + a^2 + a^2$

$$\frac{3a^2}{(1)}$$

(b) Simplify $2rs - 5rs + 4rs$

$$-3rs + 4rs$$

$$\frac{rs}{(1)}$$

(c) Simplify $4a(+2) - 7a + a(-6)$

$$\frac{-2a - 4}{(2)}$$

(Total for question 21 is 4 marks)

22 (a) Simplify $n + n + n - n$

$$3n - n$$

$$\frac{2n}{(1)}$$

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

$$5xy - xy$$

$$\frac{4xy}{(1)}$$

(c) Simplify $4a + 3b(-a) + 3b + 6$

$$\frac{3a + 6b + 6}{(2)}$$

(Total for question 22 is 4 marks)