

Name

ANSWERS

Class



www.MathsTeacherHub.com

Simplifying algebra

(9 – 1) Topic booklet

Foundation

These questions have been collated from previous years GCSE Mathematics papers.

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks

Instructions

- Use black ink or ball-point pen.
- Fill in the boxes at the top of this page with your name, centre number and candidate number.
- 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.
- If the question is a 1F question you are not allowed to use a calculator.
- If the question is a 2F or a 3F question, you may use a calculator to help you answer.

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.

Answer ALL questions
Write your answers in the space provided.
You must write down all the stages in your working.



1 (a) Simplify $5p - 3p + p$

3p

(1)

(b) Simplify $m^3 + m^3$

2m³

(1)

(c) Simplify $10 + 3c + 5d - 7c + d$

10 - 4c + 6d

(2)

June 2017 – Paper 2F

(Total for Question 1 is 4 marks)

2 Simplify $e + e + e + e$

4e

June 2022 – Paper 1F

(Total for Question 2 is 1 mark)

2 Simplify $y + 3y - 2y$



2y

November 2017 – Paper 3F

(Total for Question 2 is 1 mark)

2 (a) Simplify $8x - 3x + 2x$



7x

(1)

(b) Simplify $4y \times 2y$

8y²

(1)

Sample 1 – Paper 3F

(Total for Question 2 is 2 marks)

3 Simplify $3 \times a \times 4$

12a

November 2023 – Paper 1F

(Total for Question 3 is 1 mark)



3 Simplify $m + m + m + m$

4m

June 2023 – Paper 3F

(Total for Question 3 is 1 mark)

3 Simplify $3e - e + 4e$



6e

May 2020 – Paper 2F

(Total for Question 3 is 1 mark)

3 (a) Simplify $3f \times 5g$



15fg
(1)

(b) Simplify $t \times t$

t^2
(1)

(c) Simplify $\frac{2n + 6n}{2} = \frac{8n}{2}$

4n
(1)

November 2017 – Paper 2F

(Total for Question 3 is 3 marks)

3 Simplify $7 \times e \times f \times 8$

56ef
(1)

June 2017 – Paper 1F

(Total for Question 3 is 1 mark)

4 Simplify $7a + a - 5a$



3a

June 2024 – Paper 3F

(Total for Question 4 is 1 mark)

4 Simplify $3 \times 4t$



12t

June 2023 – Paper 2F

(Total for Question 4 is 1 mark)

4 Simplify $2m \times 3$



6m

June 2022 – Paper 3F

(Total for Question 4 is 1 mark)

4 (a) Simplify $m + m + m + m$



4m

(1)

(b) Simplify $12p \div 4$

3p

(1)

November 2021 – Paper 2F

(Total for Question 4 is 2 marks)

4 (a) Simplify $5f - f + 2f$



6f

(1)

(b) Simplify $2 \times m \times n \times 8$

16mn

(1)

(c) Simplify $t^2 + t^2$

$2t^2$

(1)

Specimen 1 – Paper 2F

(Total for Question 4 is 3 marks)

5 Complete the statement below to make it correct.



2

$\times m = 2m$

May 2024 – Paper 2F

(Total for Question 5 is 1 mark)

5 Simplify $3 \times w \times 5 \times t$

15wt

November 2022 – 1F

(Total for Question 5 is 1 mark)

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

12t

(1)

(b) Simplify $8a - 3a + 2a$

7a

(1)

May 2018 – Paper 1F

(Total for Question 6 is 2 marks)

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



4ab

(1)

(b) Simplify $4x + 3 - x + 5$

3x + 8

(2)

November 2021 – Paper 3F

(Total for Question 6 is 3 marks)

7 (a) Simplify $3m - m - m + 3m$



4m

(1)

(b) Simplify $2 \times n \times p \times 4$

8np

(1)

November 2018 – Paper 2F

(Total for Question 7 is 2 marks)

8 (a) Simplify $a \times b \times 7$



7ab

(1)

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

y^3

(1)

(c) Simplify fully $\frac{e \times e \times e \times f}{e \times e \times f \times f}$

$\frac{e}{f}$

(2)

June 2019 – Paper 2F

(Total for Question 8 is 4 marks)

9 Simplify $4e + 6f + 7e - f$



11e + 5f

June 2019 – Paper 3F

(Total for Question 9 is 2 marks)

13 (a) Simplify $8h^3 + 14h^3 - 2h^3$



$20h^3$

(1)

(b) Simplify $(9y + 12y) \div 3$

$21y \div 3$

$7y$

(1)

November 2023 – Paper 3F

(Total for Question 13 is 2 marks)

13 (a) Simplify $\frac{15a}{3}$

$5a$

(1)

(b) Simplify $19 + 5b + 4c - 7b + c$

$19 - 2b + 5c$

(2)

June 2023 – Paper 1F

(Total for Question 13 is 3 marks)

13 (a) Simplify $2a \times 5b$

10ab
(1)

(b) Simplify $3x + 2y + 5x - y$

8x + y
(2)

November 2019 – Paper 1F

(Total for Question 13 is 3 marks)



13 (a) Simplify $2c \times 3d$

6cd
(1)

$T = x + 2y$

$x = 3$ and $y = -4$

(b) Work out the value of T .

$3 + 2(-4)$

$3 - 8$

$T = -5$
(2)

June 2024 – Paper 2F

(Total for Question 13 is 3 marks)

14 Simplify $3x + 5y + 2x - 4y$



$$5x + y$$

(2)

May 2020 – Paper 3F

(Total for Question 14 is 2 marks)



14 Simplify $4c + 7d + 3c - d$

$$7c + 6d$$

(2)

November 2022 – 2F

(Total for Question 14 is 2 marks)



17 (a) Simplify $7x + 2y - 3x + 4y$

$$4x + 6y$$

(2)

Specimen 2 – Paper 2F

(Total for Question 17 is 2 marks)