



GCSE MATHEMATICS

FOUNDATION TIER

ALGEBRA

PRACTICE BOOK

Modules 13-20 | 360 original questions | Formula guides, full answers and marking guidance

FREE WEBSITE EDITION

Student name: _____

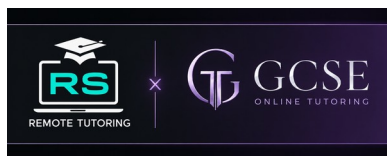
Target grade: _____ Start date: _____ Completion date: _____

www.gcseonlinetutoring.uk | www.rsremotetutoring.co.uk

Aligned to the AQA GCSE Mathematics (8300) specification. Independent educational resource - not produced, approved, endorsed or affiliated with AQA.

Copyright and licence note

Free for personal and household educational use. Tutors and schools must obtain the appropriate licence before copying for learners. Resale, paid redistribution and uploading to third-party websites are prohibited.



MODULE 13 / A1-A12, A14, A17-A19, A21-A25

Unit 3 Contents and Study Plan

MODULES 13-20 • FREE WEBSITE EDITION

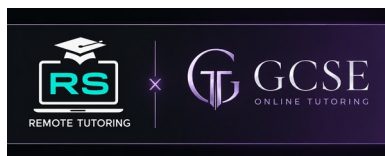
FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Work through Core Skills, Exam Practice, Grade 4-5 Challenge and same-topic retrieval. Formula guides and every answer are collected at the end.

Module	Topic	Specification	Score
13	Algebra Notation and Substitution	A1, A2, A3	____ / ____
14	Simplifying, Expanding and Factorising	A4, A6	____ / ____
15	Formulae and Linear Equations	A5, A17, A21	____ / ____
16	Inequalities and Simultaneous Equations	A19, A22	____ / ____
17	Sequences	A23, A24, A25	____ / ____
18	Coordinates and Straight-Line Graphs	A8, A9, A10	____ / ____
19	Quadratic and Real-Life Graphs	A11, A12, A14, A18	____ / ____
20	Functions and Mixed Algebra	A7; selected algebra review	____ / ____

Copyright and licence note: Free Website Edition for personal and household educational use. Tutors and schools must obtain the appropriate licence before copying for learners. Resale, paid redistribution and third-party uploading are prohibited. For licensing enquiries, visit gcseonlinetutoring.uk or rsremotetutoring.co.uk.



Unit 3 Specification Coverage Map

INDEPENDENTLY AUTHORED PRACTICE MAP

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Every question is independently authored. This page identifies the GCSE Mathematics skills covered by the unit. It is not a reproduction or adaptation of an AQA question paper, mark scheme, examiner report or other assessment material.

Module	Specification alignment	Topic coverage
13	A1, A2, A3	Algebra Notation and Substitution
14	A4, A6	Simplifying, Expanding and Factorising
15	A5, A17, A21	Formulae and Linear Equations
16	A19, A22	Inequalities and Simultaneous Equations
17	A23, A24, A25	Sequences
18	A8, A9, A10	Coordinates and Straight-Line Graphs
19	A11, A12, A14, A18	Quadratic and Real-Life Graphs
20	A7; selected algebra review	Functions and Mixed Algebra



Algebra Notation and Substitution

CORE SKILLS • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

1. Work out $3x + 2$ when $x = 4$. [2 marks]

2. Work out $5x + 2$ when $x = -2$. [2 marks]

3. Work out $-2x + 2$ when $x = 7$. [2 marks]

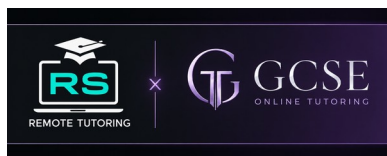
4. Work out $4x + 2$ when $x = 0$. [2 marks]

5. Work out $7x + 2$ when $x = 3$. [2 marks]

6. Work out $2x + 3y$ when $x=3$ and $y=5$. [2 marks]

7. Work out $2x + 3y$ when $x=-2$ and $y=4$. [2 marks]

8. Work out $2x + 3y$ when $x=6$ and $y=-1$. [2 marks]



Algebra Notation and Substitution

CORE SKILLS • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

9. Work out $2x + 3y$ when $x=0$ and $y=7$. [2 marks]

10. Work out $2x + 3y$ when $x=8$ and $y=2$. [2 marks]

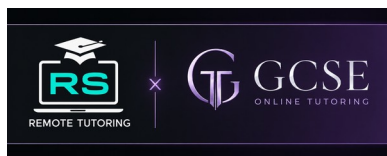
11. Write $a \times a \times a \times b$ in index notation. [1 mark]

12. Write $7 \times p$ using algebraic notation. [1 mark]

13. Write $x \div 5$ as an algebraic fraction. [1 mark]

14. State whether $4x+3$ is an expression, equation, formula or inequality. [1 mark]

15. In $9a-5$, state the coefficient of a . [1 mark]



Algebra Notation and Substitution

EXAM PRACTICE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

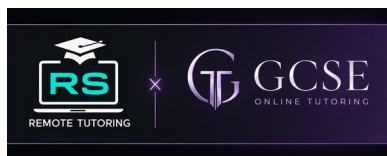
- 1. A number x is multiplied by 3 then decreased by 4. Write an expression using x . [2 marks]**

- 2. A number x is multiplied by 3 then decreased by 6. Write an expression using x . [2 marks]**

- 3. A number x is multiplied by 3 then decreased by 9. Write an expression using x . [2 marks]**

- 4. A number x is multiplied by 3 then decreased by 12. Write an expression using x . [2 marks]**

- 5. A number x is multiplied by 3 then decreased by 15. Write an expression using x . [2 marks]**



Algebra Notation and Substitution

EXAM PRACTICE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

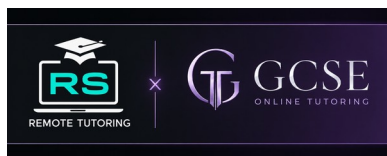
6. Use $P=2l+2w$ to find P when $l=7$ and $w=3$. [2 marks]

7. Use $P=2l+2w$ to find P when $l=9$ and $w=5$. [2 marks]

8. Use $P=2l+2w$ to find P when $l=12$ and $w=4$. [2 marks]

9. Use $P=2l+2w$ to find P when $l=8$ and $w=6$. [2 marks]

10. Use $P=2l+2w$ to find P when $l=11$ and $w=2$. [2 marks]



Algebra Notation and Substitution

EXAM PRACTICE • PART C

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

11. Use $A = \pi r^2$ to find A in terms of π when $r=2$. [2 marks]

12. Use $A = \pi r^2$ to find A in terms of π when $r=3$. [2 marks]

13. Use $A = \pi r^2$ to find A in terms of π when $r=4$. [2 marks]

14. Use $A = \pi r^2$ to find A in terms of π when $r=5$. [2 marks]

15. Use $A = \pi r^2$ to find A in terms of π when $r=6$. [2 marks]



Algebra Notation and Substitution

GRADE 4-5 CHALLENGE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

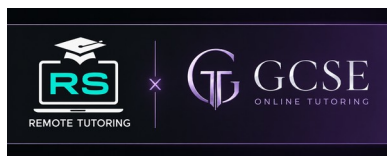
1. A taxi costs £3 plus £1.80 per mile. Write a formula for cost C for m miles. [2 marks]

2. Three consecutive integers start with n . Write their sum in simplest form. [3 marks]

3. A rectangle has length $x+4$ and width x . Write its perimeter simply. [3 marks]

4. A bag has r red counters and twice as many blue. Write the total. [2 marks]

5. Explain why $5(x+2)$ is not equal to $5x+2$. [2 marks]



Algebra Notation and Substitution

GRADE 4-5 CHALLENGE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

6. Use $E=mc^2$ to find E when $m=3$ and $c=4$. [2 marks]

7. If $a=-2$ and $b=5$, find a^2b-3a . [3 marks]

8. Write an expression for the mean of x , $x+2$ and $x+4$. [3 marks]

9. A square has side $2x+1$. Write its perimeter. [2 marks]

10. Explain the difference between $3x^2$ and $(3x)^2$. [2 marks]



MODULE 13 / A1, A2, A3

Algebra Notation and Substitution

MIXED RETRIEVAL

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

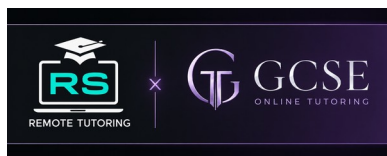
*Same-module practice. Show clear algebraic working.***1. Substitute $x = -3$ into $x^2 + 2x$. [2 marks]**

2. Write “five less than twice y ” algebraically. [1 mark]

3. State the constant term in $4x + 7$. [1 mark]

4. Use $v = u + at$ for $u = 3, a = 4, t = 5$. [2 marks]

5. Write the total cost of x pens at 60p and one £2 book, in pounds. [2 marks]



Simplifying, Expanding and Factorising

CORE SKILLS • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

1. Simplify $3x + 5x$. [1 mark]

2. Simplify $7x + -2x$. [1 mark]

3. Simplify $-4x + 9x$. [1 mark]

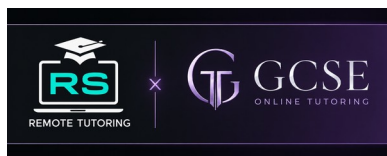
4. Simplify $6x + 3x$. [1 mark]

5. Simplify $8x + -5x$. [1 mark]

6. Expand $3(2x + 5)$. [2 marks]

7. Expand $4(-1x + 7)$. [2 marks]

8. Expand $6(3x + -2)$. [2 marks]



Simplifying, Expanding and Factorising

CORE SKILLS • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

9. Expand $5(-4x + 9)$. [2 marks]

10. Expand $8(2x + 1)$. [2 marks]

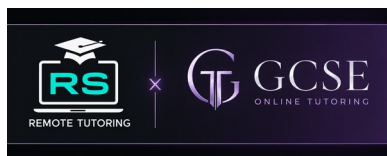
11. Factorise $6x + 9$. [2 marks]

12. Factorise $8x + 12$. [2 marks]

13. Factorise $10x + 15$. [2 marks]

14. Factorise $14x + 21$. [2 marks]

15. Factorise $12x + 18$. [2 marks]



Simplifying, Expanding and Factorising

EXAM PRACTICE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

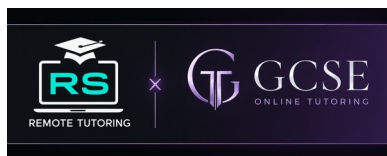
1. Simplify $2x + 3 + 5x - 2$. [2 marks]

2. Simplify $4x + -2 + 7x - 2$. [2 marks]

3. Simplify $3x + 6 + -1x - 2$. [2 marks]

4. Simplify $5x + 1 + 4x - 2$. [2 marks]

5. Simplify $6x + -3 + 2x - 2$. [2 marks]



Simplifying, Expanding and Factorising

EXAM PRACTICE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

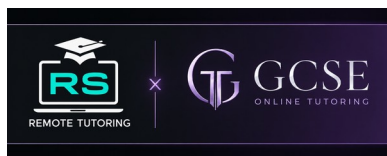
6. Expand $(x+2)(x+3)$. [3 marks]

7. Expand $(x+4)(x+5)$. [3 marks]

8. Expand $(x+1)(x+7)$. [3 marks]

9. Expand $(x+3)(x+6)$. [3 marks]

10. Expand $(x+5)(x+2)$. [3 marks]



Simplifying, Expanding and Factorising

EXAM PRACTICE • PART C

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

11. Factorise x^2+5x+6 . [3 marks]

12. Factorise $x^2+10x+24$. [3 marks]

13. Factorise x^2+9x+8 . [3 marks]

14. Factorise $x^2+12x+35$. [3 marks]

15. Factorise $x^2+12x+27$. [3 marks]



Simplifying, Expanding and Factorising

GRADE 4-5 CHALLENGE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

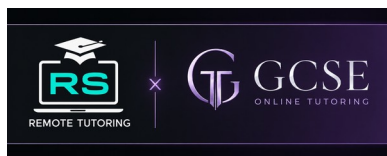
1. Expand and simplify $2(x+3) + 4(x-1)$. [3 marks]

2. Expand and simplify $3(x+2) + 5(x-1)$. [3 marks]

3. Expand and simplify $4(x+1) + 6(x-1)$. [3 marks]

4. Expand and simplify $5(x+2) + 3(x-1)$. [3 marks]

5. Expand and simplify $6(x+1) + 4(x-1)$. [3 marks]



Simplifying, Expanding and Factorising

GRADE 4-5 CHALLENGE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

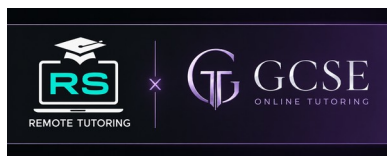
6. Show that $3(n+2)+2(n-1)$ is equivalent to $5n+4$. [2 marks]

7. Factorise fully $12x^2+18x$. [2 marks]

8. Simplify $x^3 \times x^4$. [1 mark]

9. Simplify $y^8 \div y^3$. [1 mark]

10. Simplify $(a^2)^3$. [1 mark]



Simplifying, Expanding and Factorising

MIXED RETRIEVAL

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

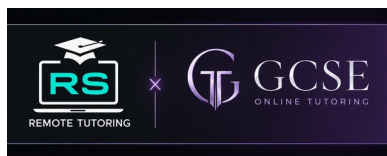
1. Expand $7(2x-3)$. [2 marks]

2. Factorise $15x+25$. [2 marks]

3. Simplify $4a+3b-a+2b$. [2 marks]

4. Expand $(x+4)(x+2)$. [3 marks]

5. Factorise $x^2+9x+20$. [3 marks]



Formulae and Linear Equations

CORE SKILLS • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

1. Solve $3x + 5 = 20$. [2 marks]

2. Solve $4x + -2 = 18$. [2 marks]

3. Solve $5x + 7 = 32$. [2 marks]

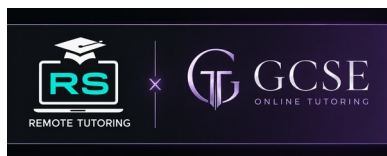
4. Solve $6x + 1 = 25$. [2 marks]

5. Solve $7x + -4 = 31$. [2 marks]

6. Solve $3x+5=1x+17$. [3 marks]

7. Solve $5x+2=2x+20$. [3 marks]

8. Solve $4x+-3=1x+12$. [3 marks]



Formulae and Linear Equations

CORE SKILLS • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

9. Solve $6x+1=3x+16$. [3 marks]

10. Solve $7x+-2=4x+13$. [3 marks]

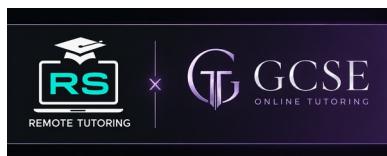
11. Solve $2(x+3)=18$. [3 marks]

12. Solve $3(x+4)=30$. [3 marks]

13. Solve $4(x+-1)=28$. [3 marks]

14. Solve $5(x+2)=45$. [3 marks]

15. Solve $6(x+-3)=42$. [3 marks]



Formulae and Linear Equations

EXAM PRACTICE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

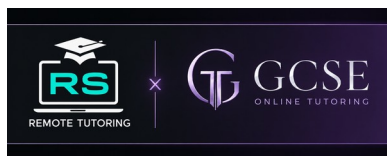
1. Make x the subject of $y=3x+5$. [2 marks]

2. Make r the subject of $C=2\pi r$. [2 marks]

3. Make h the subject of $A=bh/2$. [3 marks]

4. Make t the subject of $v=u+at$. [3 marks]

5. Make w the subject of $P=2l+2w$. [3 marks]



Formulae and Linear Equations

EXAM PRACTICE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

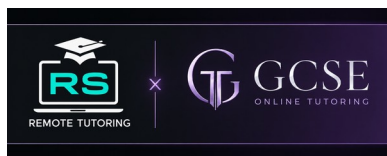
6. Three times a number plus 4 is 40. Form and solve an equation. [3 marks]

7. Three times a number plus 4 is 58. Form and solve an equation. [3 marks]

8. Three times a number plus 4 is 76. Form and solve an equation. [3 marks]

9. Three times a number plus 4 is 94. Form and solve an equation. [3 marks]

10. Three times a number plus 4 is 112. Form and solve an equation. [3 marks]



Formulae and Linear Equations

EXAM PRACTICE • PART C

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

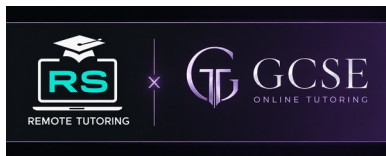
11. A rectangle has perimeter 26 cm and length 8 cm. Form an equation and find width. [3 marks]

12. A rectangle has perimeter 34 cm and length 10 cm. Form an equation and find width. [3 marks]

13. A rectangle has perimeter 32 cm and length 12 cm. Form an equation and find width. [3 marks]

14. A rectangle has perimeter 30 cm and length 9 cm. Form an equation and find width. [3 marks]

15. A rectangle has perimeter 36 cm and length 15 cm. Form an equation and find width. [3 marks]



Formulae and Linear Equations

GRADE 4-5 CHALLENGE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

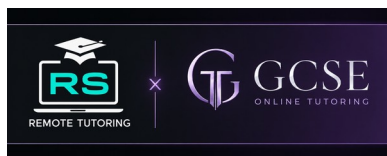
1. Solve $4(x-2)+3=19$. [4 marks]

2. Solve $(x+5)/3=7$. [3 marks]

3. Make x subject of $y=(x+4)/5$. [3 marks]

4. The angles of a triangle are x , $2x$ and $3x$. Find x . [3 marks]

5. A phone plan costs £12 plus £4 per GB. A bill is £40. Find GB used. [3 marks]



Formulae and Linear Equations

GRADE 4-5 CHALLENGE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

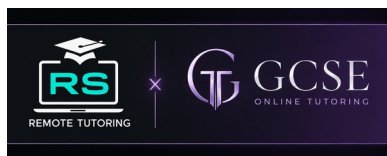
6. Solve $2(3x-1)=4x+10$. [4 marks]

7. Make b subject of $A=(a+b)h/2$. [4 marks]

8. A number and its half total 27. Find it. [4 marks]

9. Perimeter of regular n -gon is P . Make side s subject of $P=ns$. [2 marks]

10. Explain how to check an equation solution. [2 marks]



Formulae and Linear Equations

MIXED RETRIEVAL

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

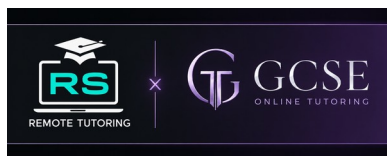
1. Solve $5x - 7 = 18$. [2 marks]

2. Solve $3(x + 4) = 27$. [2 marks]

3. Solve $7x + 1 = 4x + 19$. [3 marks]

4. Make a the subject of $v = u + at$. [3 marks]

5. A number doubled then reduced by 3 gives 17. Find it. [3 marks]



Inequalities and Simultaneous Equations

CORE SKILLS • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

1. Solve $2x+3<11$. [2 marks]

2. Solve $3x+-2<13$. [2 marks]

3. Solve $4x+5<21$. [2 marks]

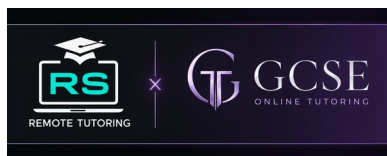
4. Solve $5x+-3<17$. [2 marks]

5. Solve $6x+1<25$. [2 marks]

6. Solve $2x+4\geq 12$. [2 marks]

7. Solve $3x+-3\geq 9$. [2 marks]

8. Solve $4x+2\geq 18$. [2 marks]



Inequalities and Simultaneous Equations

CORE SKILLS • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

9. Solve $5x + -5 \geq 20$. [2 marks]

10. Solve $6x + 6 \geq 30$. [2 marks]

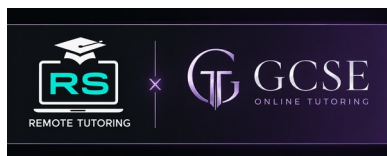
11. List the integers satisfying $-2 < x \leq 3$. [2 marks]

12. Describe $x < 4$ on a number line. [2 marks]

13. Describe $x \geq -1$ on a number line. [2 marks]

14. Solve $3(x + 2) \leq 18$. [3 marks]

15. Solve $5x - 2 > 2x + 10$. [3 marks]



Inequalities and Simultaneous Equations

EXAM PRACTICE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

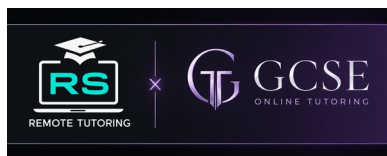
1. Solve simultaneously: $2x+1y=11$ and $1x-1y=1$. [4 marks]

2. Solve simultaneously: $1x+1y=9$ and $1x-1y=3$. [4 marks]

3. Solve simultaneously: $3x+1y=13$ and $1x-1y=3$. [4 marks]

4. Solve simultaneously: $2x+1y=12$ and $1x-1y=2$. [4 marks]

5. Solve simultaneously: $4x+1y=17$ and $1x-1y=3$. [4 marks]



Inequalities and Simultaneous Equations

EXAM PRACTICE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

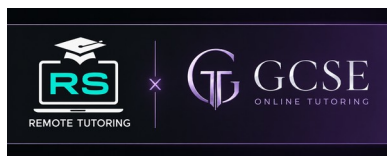
6. Two numbers have sum 8 and difference -2. Form simultaneous equations and find them. [4 marks]

7. Two numbers have sum 6 and difference 2. Form simultaneous equations and find them. [4 marks]

8. Two numbers have sum 7 and difference 5. Form simultaneous equations and find them. [4 marks]

9. Two numbers have sum 9 and difference -5. Form simultaneous equations and find them. [4 marks]

10. Two numbers have sum 9 and difference 1. Form simultaneous equations and find them. [4 marks]



Inequalities and Simultaneous Equations

EXAM PRACTICE • PART C

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

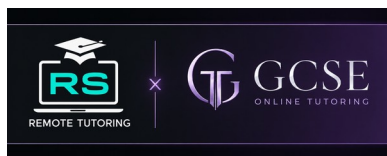
11. Solve $-3x < 12$. [3 marks]

12. Solve $5 - 2x \geq 11$. [3 marks]

13. Solve $2 \leq 3x - 1 < 11$. [4 marks]

14. List integers satisfying $-3 < x \leq 2$. [2 marks]

15. Represent $-1 \leq x < 3$ on a number line. [2 marks]



Inequalities and Simultaneous Equations

GRADE 4-5 CHALLENGE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

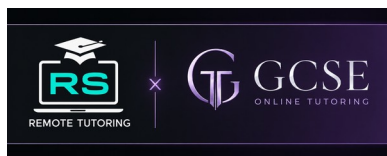
1. Solve $x+y=13$ and $2x-y=8$. [4 marks]

2. Solve $3x+2y=16$ and $x+y=6$. [4 marks]

3. Pens cost £2 and books £5. Ten items cost £32. Find each number. [5 marks]

4. Two angles total 180° and differ by 36° . Find them. [4 marks]

5. A farm has chickens and cows: 18 animals, 50 legs. Find each. [5 marks]



Inequalities and Simultaneous Equations

GRADE 4-5 CHALLENGE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

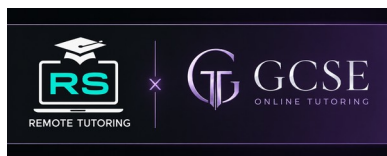
6. Explain why multiplying an inequality by -1 reverses it. [2 marks]

7. Find greatest integer satisfying $4x+1<22$. [3 marks]

8. Solve simultaneously $y=2x+1$ and $y=10-x$. [4 marks]

9. Find possible integer pair $x+y=9$ with $x>y$ and $y\geq 3$. [3 marks]

10. A cinema sells adult £8 and child £5 tickets. 20 tickets total £127. Find numbers. [5 marks]



Inequalities and Simultaneous Equations

MIXED RETRIEVAL

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

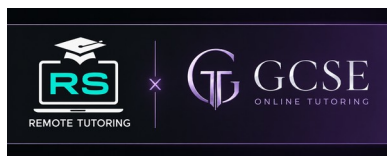
1. Solve $2x+1<9$. [2 marks]

2. List integers satisfying $-1 \leq x < 3$. [2 marks]

3. Solve $4x-3 \geq 13$. [2 marks]

4. Solve $x+y=8$ and $x-y=2$. [3 marks]

5. Explain open versus closed circles. [2 marks]



Sequences

CORE SKILLS • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

1. Write the next three terms: 2, 5, 8, ... [2 marks]

2. Write the next three terms: 5, 9, 13, ... [2 marks]

3. Write the next three terms: 10, 8, 6, ... [2 marks]

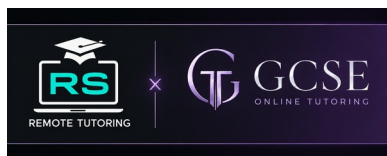
4. Write the next three terms: -3, 2, 7, ... [2 marks]

5. Write the next three terms: 7, 13, 19, ... [2 marks]

6. Find the n th term of 3, 7, 11, ... [2 marks]

7. Find the n th term of 7, 10, 13, ... [2 marks]

8. Find the n th term of 12, 10, 8, ... [2 marks]



Sequences

CORE SKILLS • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

9. Find the n th term of -5, 1, 7, ... [2 marks]

10. Find the n th term of 9, 14, 19, ... [2 marks]

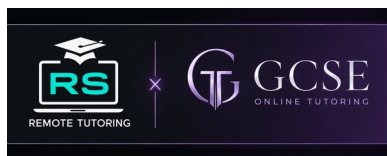
11. Find term 20 of the sequence with n th term $3n+2$. [2 marks]

12. Find term 15 of the sequence with n th term $4n-1$. [2 marks]

13. Find term 12 of the sequence with n th term $5n+3$. [2 marks]

14. Find term 10 of the sequence with n th term $6n-4$. [2 marks]

15. Find term 9 of the sequence with n th term $7n+1$. [2 marks]



Sequences

EXAM PRACTICE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

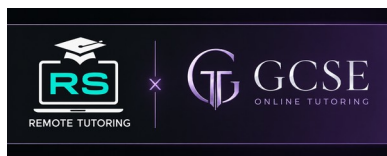
1. State the next two triangular numbers after 15. [2 marks]

2. State the next two square numbers after 36. [1 mark]

3. Continue 1,1,2,3,5 with three terms. [2 marks]

4. Continue 3,6,12,24 with two terms. [2 marks]

5. Find first differences of 2,5,10,17,26. [2 marks]



Sequences

EXAM PRACTICE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

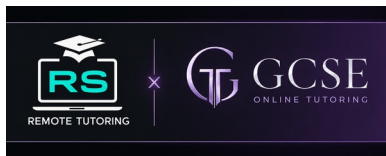
6. Is 31 in the sequence $3n+1$? Show working. [3 marks]

7. Is 42 in the sequence $4n+2$? Show working. [3 marks]

8. Is 48 in the sequence $5n-2$? Show working. [3 marks]

9. Is 63 in the sequence $6n+3$? Show working. [3 marks]

10. Is 69 in the sequence $7n-1$? Show working. [3 marks]



Sequences

EXAM PRACTICE • PART C

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

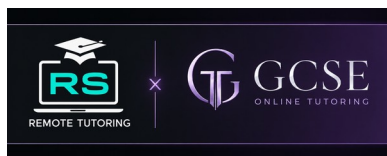
11. A pattern has 1 tiles at stage 0 and increases by 2 per stage. Write the stage-n rule. [2 marks]

12. A pattern has 2 tiles at stage 0 and increases by 3 per stage. Write the stage-n rule. [2 marks]

13. A pattern has 3 tiles at stage 0 and increases by 1 per stage. Write the stage-n rule. [2 marks]

14. A pattern has 4 tiles at stage 0 and increases by 2 per stage. Write the stage-n rule. [2 marks]

15. A pattern has 5 tiles at stage 0 and increases by 3 per stage. Write the stage-n rule. [2 marks]



Sequences

GRADE 4-5 CHALLENGE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

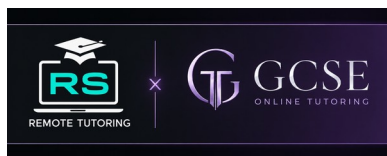
1. Find nth term of 11,18,25,32. [2 marks]

2. Which term of $4n-1$ is 99? [3 marks]

3. A Fibonacci-type sequence starts 2,5. Write next five terms. [3 marks]

4. Find next term of 2,6,12,20,30. [3 marks]

5. A sequence has nth term $3n+8$. Find difference between 20th and 10th terms. [3 marks]



Sequences

GRADE 4-5 CHALLENGE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

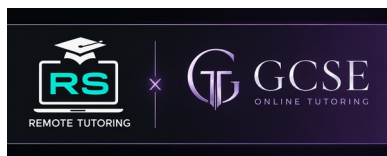
6. Show 100 is not in $6n+3$. [3 marks]

7. Find missing term: 4, 9, __, 19, 24. [1 mark]

8. A geometric sequence starts 5 and doubles. Find 8th term. [3 marks]

9. Second differences are constant 2. What type is the sequence? [1 mark]

10. A sequence decreases by 4 from 30. Find first negative term. [3 marks]



Sequences

MIXED RETRIEVAL

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

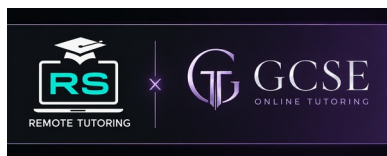
1. Find nth term of 5,9,13,17. [2 marks]

2. Find 20th term of $3n-2$. [2 marks]

3. Is 51 in $4n+3$? [3 marks]

4. Continue 2,3,5,8,13. [2 marks]

5. Name 1,8,27,64. [1 mark]



Coordinates and Straight-Line Graphs

CORE SKILLS • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

1. State the quadrant or axis containing $(-3,4)$. [1 mark]

2. State the quadrant or axis containing $(2,-5)$. [1 mark]

3. State the quadrant or axis containing $(0,6)$. [1 mark]

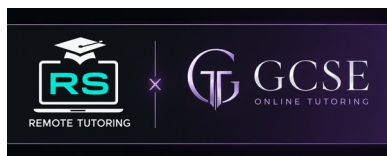
4. State the quadrant or axis containing $(5,1)$. [1 mark]

5. State the quadrant or axis containing $(-4,-2)$. [1 mark]

6. For $y=2x+1$, find y when $x=3$. [2 marks]

7. For $y=3x-2$, find y when $x=4$. [2 marks]

8. For $y=-1x+5$, find y when $x=6$. [2 marks]



Coordinates and Straight-Line Graphs

CORE SKILLS • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

9. For $y=4x+0$, find y when $x=-2$. [2 marks]

10. For $y=0x+7$, find y when $x=10$. [2 marks]

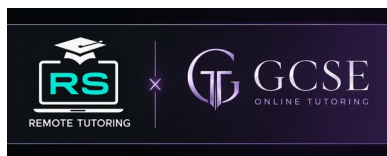
11. State gradient and y -intercept of $y=2x+3$. [2 marks]

12. State gradient and y -intercept of $y=3x-1$. [2 marks]

13. State gradient and y -intercept of $y=-2x+4$. [2 marks]

14. State gradient and y -intercept of $y=1x-5$. [2 marks]

15. State gradient and y -intercept of $y=4x+2$. [2 marks]



Coordinates and Straight-Line Graphs

EXAM PRACTICE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

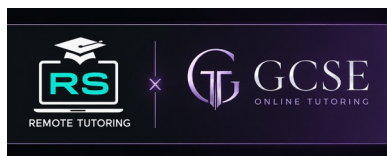
1. Complete points for $y=2x+1$ at $x=0,1,2$. [3 marks]

2. Complete points for $y=3x-2$ at $x=0,1,2$. [3 marks]

3. Complete points for $y=-1x+4$ at $x=0,1,2$. [3 marks]

4. Complete points for $y=4x+0$ at $x=0,1,2$. [3 marks]

5. Complete points for $y=1x+5$ at $x=0,1,2$. [3 marks]



Coordinates and Straight-Line Graphs

EXAM PRACTICE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

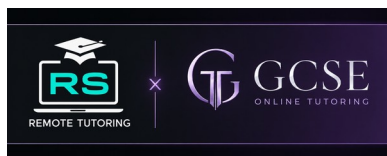
6. Find gradient through (0,2) and (3,8). [2 marks]

7. Find gradient through (1,4) and (5,12). [2 marks]

8. Find gradient through (-2,1) and (2,9). [2 marks]

9. Find gradient through (0,-3) and (4,5). [2 marks]

10. Find gradient through (2,7) and (6,15). [2 marks]



Coordinates and Straight-Line Graphs

EXAM PRACTICE • PART C

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

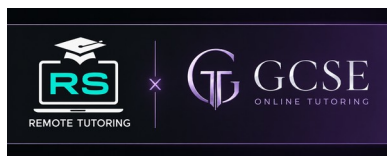
11. Find equation with gradient 3 and intercept -4 . [2 marks]

12. State a line parallel to $y=2x+5$. [2 marks]

13. Find equation through $(0,6)$ with gradient -2 . [2 marks]

14. Find x-intercept of $y=3x-12$. [2 marks]

15. Do $y=4x+1$ and $y=4x-7$ intersect? [2 marks]



Coordinates and Straight-Line Graphs

GRADE 4-5 CHALLENGE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

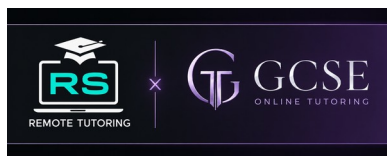
1. Find equation through (1,5) with gradient 2. [4 marks]

2. Find intersection of $y=2x+1$ and $y=-x+10$. [4 marks]

3. A line passes through $(-2,1)$ and $(4,13)$. Find equation. [4 marks]

4. Show $(3,11)$ lies on $y=3x+2$. [2 marks]

5. Find midpoint of $(-4,6)$ and $(8,-2)$. [3 marks]



Coordinates and Straight-Line Graphs

GRADE 4-5 CHALLENGE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

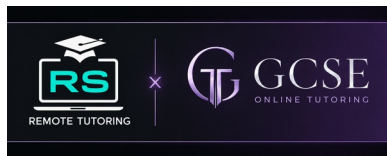
6. A line has x-intercept 4 and y-intercept 8. Find gradient. [3 marks]

7. Find missing y so gradient from (2,3) to (6,y) is 2. [3 marks]

8. Are $y=3x+1$ and $6x-2y=8$ parallel? [3 marks]

9. Find equation horizontal through (5,-2). [2 marks]

10. Find equation vertical through (-3,4). [2 marks]



Coordinates and Straight-Line Graphs

MIXED RETRIEVAL

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

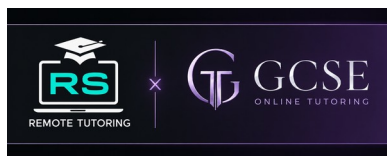
1. For $y=2x+3$ find y at $x=5$. [1 mark]

2. State gradient of $y=-3x+4$. [1 mark]

3. State intercept of $y=7x-2$. [1 mark]

4. Find gradient from (1,2) to (4,8). [2 marks]

5. Write equation gradient 5, intercept 1. [2 marks]



Quadratic and Real-Life Graphs

CORE SKILLS • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

1. For $y=x^2-4$, find y when $x=-3$. [2 marks]

2. For $y=x^2-4$, find y when $x=-2$. [2 marks]

3. For $y=x^2-4$, find y when $x=-1$. [2 marks]

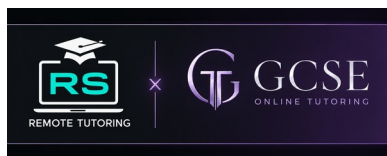
4. For $y=x^2-4$, find y when $x=0$. [2 marks]

5. For $y=x^2-4$, find y when $x=1$. [2 marks]

6. State roots of $y=(x-2)(x-3)$. [2 marks]

7. State roots of $y=(x-1)(x-5)$. [2 marks]

8. State roots of $y=(x-4)(x-2)$. [2 marks]



Quadratic and Real-Life Graphs

CORE SKILLS • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

9. State roots of $y=(x-3)(x-6)$. [2 marks]

10. State roots of $y=(x-5)(x-1)$. [2 marks]

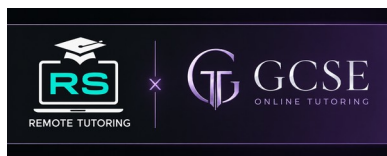
11. State turning point of $y=(x-(2))^2+(1)$. [2 marks]

12. State turning point of $y=(x-(-3))^2+(4)$. [2 marks]

13. State turning point of $y=(x-(1))^2+(-2)$. [2 marks]

14. State turning point of $y=(x-(0))^2+(5)$. [2 marks]

15. State turning point of $y=(x-(4))^2+(0)$. [2 marks]



Quadratic and Real-Life Graphs

EXAM PRACTICE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

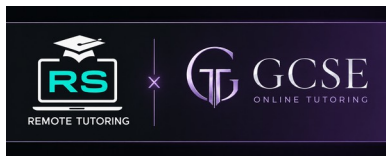
1. Describe the shape of $y=x^2$. [2 marks]

2. Sketch key features of $y=1/x$. [3 marks]

3. State y-intercept of $y=x^2-3x+2$. [1 mark]

4. Find roots of $y=x^2-5x+6$. [3 marks]

5. State symmetry line of $y=(x-4)^2-1$. [2 marks]



Quadratic and Real-Life Graphs

EXAM PRACTICE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

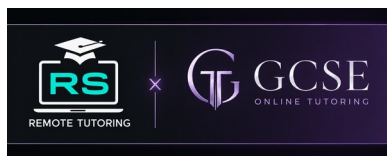
6. A distance-time graph rises uniformly from 0 to 120 km in 2 h. Find gradient and interpret it. [3 marks]

7. A distance-time graph rises uniformly from 0 to 180 km in 3 h. Find gradient and interpret it. [3 marks]

8. A distance-time graph rises uniformly from 0 to 90 km in 1.5 h. Find gradient and interpret it. [3 marks]

9. A distance-time graph rises uniformly from 0 to 240 km in 4 h. Find gradient and interpret it. [3 marks]

10. A distance-time graph rises uniformly from 0 to 150 km in 2.5 h. Find gradient and interpret it. [3 marks]



Quadratic and Real-Life Graphs

EXAM PRACTICE • PART C

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

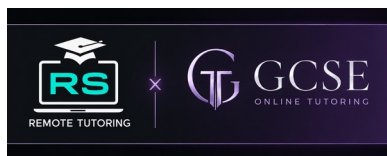
11. A journey graph is horizontal for 2 hours after travelling at 60 km/h. What does the horizontal section mean? [2 marks]

12. A journey graph is horizontal for 3 hours after travelling at 45 km/h. What does the horizontal section mean? [2 marks]

13. A journey graph is horizontal for 1.5 hours after travelling at 80 km/h. What does the horizontal section mean? [2 marks]

14. A journey graph is horizontal for 4 hours after travelling at 50 km/h. What does the horizontal section mean? [2 marks]

15. A journey graph is horizontal for 2.5 hours after travelling at 70 km/h. What does the horizontal section mean? [2 marks]



Quadratic and Real-Life Graphs

GRADE 4-5 CHALLENGE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

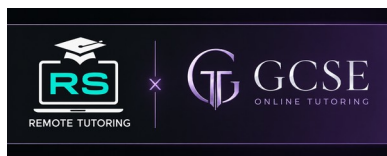
1. Use graph idea to solve $x^2=9$. [3 marks]

2. A quadratic crosses x-axis at -2 and 5 . Write a possible equation. [3 marks]

3. Explain why $y=x^2+4$ has no real roots. [2 marks]

4. For $y=x^3$, state y at $x=-2$. [1 mark]

5. For $y=1/x$, state y at $x=0.25$. [1 mark]



Quadratic and Real-Life Graphs

GRADE 4-5 CHALLENGE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

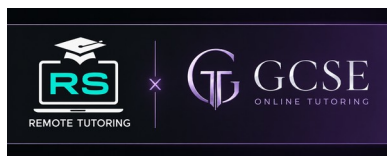
6. Find roots of x^2+x-12 . [3 marks]

7. A parabola has roots 1 and 6. State its symmetry line. [2 marks]

8. A distance-time graph rises 90 km in 1.5 h then is flat 30 min. Find moving speed and total elapsed time. [4 marks]

9. Sketch key features of $y=(x-2)^2-4$. [4 marks]

10. Find approximate meaning of intersection of distance-time graphs. [2 marks]



Quadratic and Real-Life Graphs

MIXED RETRIEVAL

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

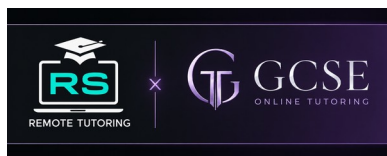
1. Find roots of $x^2 - 7x + 12$. [3 marks]

2. State turning point of $(x-2)^2 + 3$. [2 marks]

3. Interpret a horizontal distance-time segment. [1 mark]

4. Find gradient: 100 km in 2 h. [2 marks]

5. State y-intercept of $x^2 + 2x - 5$. [1 mark]



Functions and Mixed Algebra

CORE SKILLS • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

1. A function multiplies input by 2 then adds 3. Find output for 4. [2 marks]

2. A function multiplies input by 3 then adds -1. Find output for 5. [2 marks]

3. A function multiplies input by -2 then adds 6. Find output for 3. [2 marks]

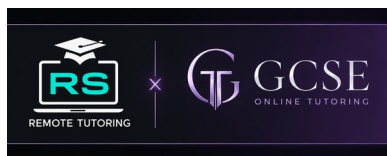
4. A function multiplies input by 4 then adds 2. Find output for -1. [2 marks]

5. A function multiplies input by 5 then adds -4. Find output for 2. [2 marks]

6. A function is $2x+3$. Find input giving output 15. [2 marks]

7. A function is $3x-1$. Find input giving output 20. [2 marks]

8. A function is $4x+2$. Find input giving output 30. [2 marks]



Functions and Mixed Algebra

CORE SKILLS • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

9. A function is $5x-4$. Find input giving output 21. [2 marks]

10. A function is $6x+1$. Find input giving output 43. [2 marks]

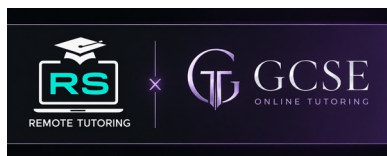
11. Write function machine for $3x+5$. [1 mark]

12. Find missing operation: input 4 → output 19 after $\times 4$ then ?. [2 marks]

13. Explain why function $y=2x+1$ gives odd outputs for integer x . [2 marks]

14. Use $f(x)=x^2-1$ to find $f(5)$. [2 marks]

15. Use $f(x)=3x+2$ to find $f(-4)$. [2 marks]



Functions and Mixed Algebra

EXAM PRACTICE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

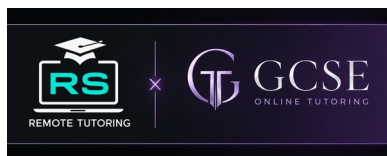
1. Simplify $5x+3x-2$. [2 marks]

2. Expand $4(x-3)$. [2 marks]

3. Factorise $6x+9$. [2 marks]

4. Solve $3x+4=19$. [2 marks]

5. Find nth term 4,7,10,13. [2 marks]



Functions and Mixed Algebra

EXAM PRACTICE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

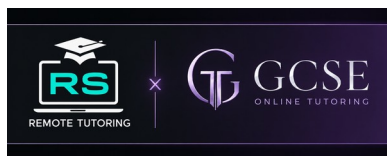
6. Solve $x+y=10$ and $x-y=4$. [3 marks]

7. Solve $2x-1<9$. [2 marks]

8. State gradient of $y=3x-7$. [1 mark]

9. Find roots $x^2-5x+6=0$. [3 marks]

10. Make r subject of $C=2\pi r$. [2 marks]



Functions and Mixed Algebra

EXAM PRACTICE • PART C

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

11. Substitute $x=3, y=-2$ into $2x^2+3y$. [2 marks]

12. Expand and simplify $3(x+4)+2(x-1)$. [3 marks]

13. Factorise $x^2+7x+12$. [3 marks]

14. Solve $4x+3=2x+17$. [3 marks]

15. Solve simultaneously $2x+y=11$ and $x-y=1$. [4 marks]



Functions and Mixed Algebra

GRADE 4-5 CHALLENGE • PART A

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Same-module practice. Show clear algebraic working.

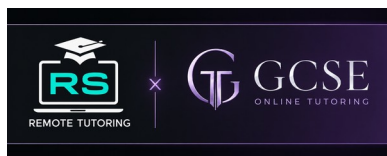
1. Find nth term 8,13,18,23. [2 marks]

2. Find equation through (0,−2) gradient 4. [2 marks]

3. Find roots of $x^2-9=0$. [2 marks]

4. Solve $3x+1\leq 16$. [2 marks]

5. Use $f(x)=2x^2-3$ to find $f(4)$. [2 marks]



Functions and Mixed Algebra

GRADE 4-5 CHALLENGE • PART B

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

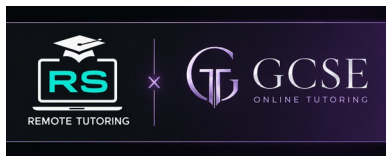
6. A function maps x to $2x-3$. Find output after input is increased by 5. [3 marks]

7. Show $2(3x+1)-x$ is equivalent to $5x+2$. [2 marks]

8. A sequence n th term is $5n-2$. Find first term above 100. [4 marks]

9. Line $y=2x+1$ and $y=-x+10$ meet. Find intersection. [4 marks]

10. Rectangle sides x and $x+3$, perimeter 30. Find sides. [4 marks]



Functions and Mixed Algebra

MIXED RETRIEVAL

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Same-module practice. Show clear algebraic working.

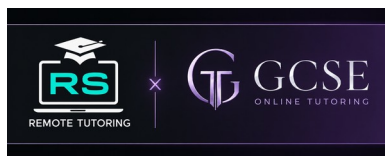
1. Find $f(3)$ for $f(x)=4x-1$. [1 mark]

2. Simplify $2a+5a$. [1 mark]

3. Solve $5x=35$. [1 mark]

4. Find next term 6,10,14. [1 mark]

5. State y-intercept of $y=2x+6$. [1 mark]



Algebra Notation and Substitution

FORMULAS AND METHOD BANK

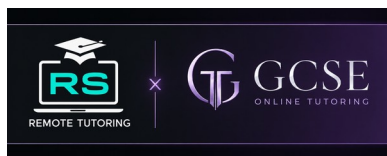
FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use these methods before checking the answer tables. Write the setup first, substitute values, calculate, then give a final answer with units.

When to use it	Formula / method
Substitution	Replace each letter with its value; use brackets for negative values.
Algebra notation	ab means $a \times b$; a^2 means $a \times a$; a/b means $a \div b$.
Expression vocabulary	term: part separated by $+$ / $-$; coefficient: number multiplying a variable; constant: term without a variable.
Forming expressions	Translate operations in the stated order and simplify like terms.
Formula evaluation	Write formula $\rightarrow$ substitute $\rightarrow$ calculate $\rightarrow$ include units.

Marking reminder: a correct setup can earn method marks even when a later arithmetic error occurs.



Simplifying, Expanding and Factorising

FORMULAS AND METHOD BANK

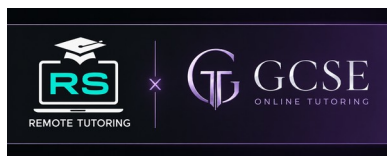
FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use these methods before checking the answer tables. Write the setup first, substitute values, calculate, then give a final answer with units.

When to use it	Formula / method
Collect like terms	Add or subtract coefficients only when variable parts match.
Expand one bracket	$a(b+c)=ab+ac$.
Factorise	Take out the highest common factor from every term.
Two brackets	$(x+a)(x+b)=x^2+(a+b)x+ab$.
Index laws	$x^m x^n = x^{m+n}$; $x^m \div x^n = x^{m-n}$; $(x^m)^n = x^{mn}$.
Identity check	Expand both sides and show they simplify to the same expression.

Marking reminder: a correct setup can earn method marks even when a later arithmetic error occurs.



Formulae and Linear Equations

FORMULAS AND METHOD BANK

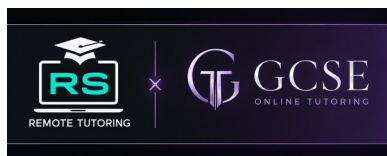
FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use these methods before checking the answer tables. Write the setup first, substitute values, calculate, then give a final answer with units.

When to use it	Formula / method
Linear equation	Use inverse operations equally on both sides.
Unknown both sides	Collect x-terms on one side and constants on the other.
Brackets	Expand first or divide both sides when the entire side is multiplied.
Change subject	Undo operations in reverse order while preserving equality.
Context equation	Define the variable, form equation, solve, then interpret with units.

Marking reminder: a correct setup can earn method marks even when a later arithmetic error occurs.



Inequalities and Simultaneous Equations

FORMULAS AND METHOD BANK

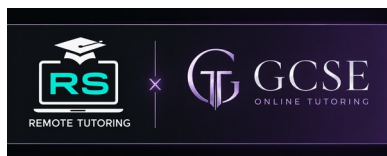
FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use these methods before checking the answer tables. Write the setup first, substitute values, calculate, then give a final answer with units.

When to use it	Formula / method
Inequality	Solve like an equation; reverse the sign only when multiplying/dividing by a negative.
Number line	Open circle for $<$ or $>$; closed circle for $\leq$ or $\geq$.
Simultaneous elimination	Match coefficients, add/subtract equations, solve one variable, substitute back.
Context pair	Define two variables, form two equations, solve and interpret.

Marking reminder: a correct setup can earn method marks even when a later arithmetic error occurs.



Sequences

FORMULAS AND METHOD BANK

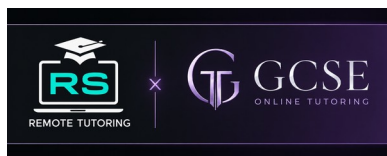
FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use these methods before checking the answer tables. Write the setup first, substitute values, calculate, then give a final answer with units.

When to use it	Formula / method
Arithmetic nth term	$\text{nth term} = \text{difference} \times n + (\text{first term} - \text{difference})$.
Use nth term	Substitute the term position for n .
Membership	Set n th-term expression equal to value; solve; n must be a positive integer.
Fibonacci-type	Each term is formed from the previous specified terms.
Quadratic recognition	Constant second differences indicate a quadratic sequence.

Marking reminder: a correct setup can earn method marks even when a later arithmetic error occurs.



Coordinates and Straight-Line Graphs

FORMULAS AND METHOD BANK

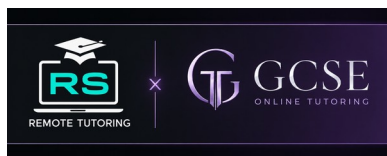
FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use these methods before checking the answer tables. Write the setup first, substitute values, calculate, then give a final answer with units.

When to use it	Formula / method
Straight line	$y=mx+c$ where m is gradient and c is y -intercept.
Gradient	$m=(\text{change in } y)/(\text{change in } x)$.
Parallel lines	Parallel non-identical lines have equal gradients.
Plot	Create a value table; plot accurately; join with a ruler.
Intercepts	y -intercept: $x=0$; x -intercept: $y=0$.

Marking reminder: a correct setup can earn method marks even when a later arithmetic error occurs.



Quadratic and Real-Life Graphs

FORMULAS AND METHOD BANK

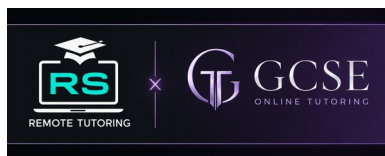
FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use these methods before checking the answer tables. Write the setup first, substitute values, calculate, then give a final answer with units.

When to use it	Formula / method
Quadratic roots	Where graph crosses x-axis; solve $y=0$, often by factorising.
Turning point	Maximum/minimum point; symmetry passes through it.
Real-context gradient	Change in vertical quantity $\div$ change in horizontal quantity.
Distance-time	Rising line: moving; horizontal: stopped; steeper: faster.
Reciprocal graph	$y=1/x$; $x \neq 0$; axes are asymptotes.

Marking reminder: a correct setup can earn method marks even when a later arithmetic error occurs.



Functions and Mixed Algebra

FORMULAS AND METHOD BANK

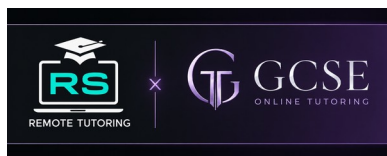
FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use these methods before checking the answer tables. Write the setup first, substitute values, calculate, then give a final answer with units.

When to use it	Formula / method
Function machine	Apply operations in the stated order to the input.
Find input	Set the function expression equal to output and solve.
Mixed algebra	Identify topic first: simplify, expand, solve, sequence or graph.
Intersection	At an intersection the two y-values are equal; equate equations.
Check	Substitute solutions back into original expression/equation.

Marking reminder: a correct setup can earn method marks even when a later arithmetic error occurs.



Algebra Notation and Substitution

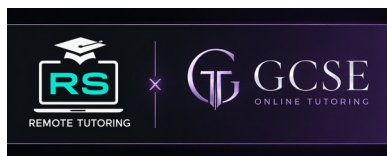
CORE SKILLS • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$3 \times (4) + 2 = 14.$	2	M1 method; A1 answer.
2	$5 \times (-2) + 2 = -8.$	2	M1 method; A1 answer.
3	$-2 \times (7) + 2 = -12.$	2	M1 method; A1 answer.
4	$4 \times (0) + 2 = 2.$	2	M1 method; A1 answer.
5	$7 \times (3) + 2 = 23.$	2	M1 method; A1 answer.
6	$2(3) + 3(5) = 21.$	2	M1 method; A1 answer.
7	$2(-2) + 3(4) = 8.$	2	M1 method; A1 answer.
8	$2(6) + 3(-1) = 9.$	2	M1 method; A1 answer.



Algebra Notation and Substitution

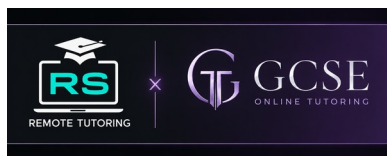
CORE SKILLS • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Marks	Check
9	$2(0)+3(7)=21.$	2	M1 method; A1 answer.
10	$2(8)+3(2)=22.$	2	M1 method; A1 answer.
11	$a^3b.$	1	B1: correct result or statement.
12	$7p.$	1	B1: correct result or statement.
13	$x/5.$	1	B1: correct result or statement.
14	Expression.	1	B1: correct result or statement.
15	9.	1	B1: correct result or statement.



Algebra Notation and Substitution

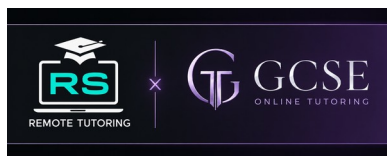
EXAM PRACTICE • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$3x-4$.	2	M1 method; A1 answer.
2	$3x-6$.	2	M1 method; A1 answer.
3	$3x-9$.	2	M1 method; A1 answer.
4	$3x-12$.	2	M1 method; A1 answer.
5	$3x-15$.	2	M1 method; A1 answer.
6	$P=2(7)+2(3)=20$.	2	M1 method; A1 answer.
7	$P=2(9)+2(5)=28$.	2	M1 method; A1 answer.
8	$P=2(12)+2(4)=32$.	2	M1 method; A1 answer.



Algebra Notation and Substitution

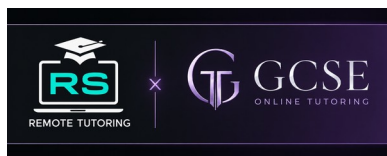
EXAM PRACTICE • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	$P=2(8)+2(6)=28.$	2	M1 method; A1 answer.
10	$P=2(11)+2(2)=26.$	2	M1 method; A1 answer.
11	$A=\pi \times 2^2=4\pi.$	2	M1 method; A1 answer.
12	$A=\pi \times 3^2=9\pi.$	2	M1 method; A1 answer.
13	$A=\pi \times 4^2=16\pi.$	2	M1 method; A1 answer.
14	$A=\pi \times 5^2=25\pi.$	2	M1 method; A1 answer.
15	$A=\pi \times 6^2=36\pi.$	2	M1 method; A1 answer.



Algebra Notation and Substitution

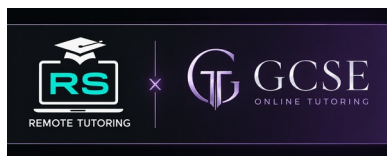
GRADE 4-5 CHALLENGE - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$C=3+1.8m$.	2	M1 method; A1 answer.
2	$n+(n+1)+(n+2)=3n+3$.	3	M1 setup; M1 process; A1 conclusion.
3	$2(x+4)+2x=4x+8$.	3	M1 setup; M1 process; A1 conclusion.
4	$r+2r=3r$.	2	M1 method; A1 answer.
5	5 must multiply both terms: $5(x+2)=5x+10$.	2	M1 method; A1 answer.
6	$E=3 \times 4^2=48$.	2	M1 method; A1 answer.
7	$4 \times 5+6=26$.	3	M1 setup; M1 process; A1 conclusion.
8	$(3x+6)/3=x+2$.	3	M1 setup; M1 process; A1 conclusion.
9	$4(2x+1)=8x+4$.	2	M1 method; A1 answer.
10	$3x^2=3 \times x^2$; $(3x)^2=9x^2$.	2	M1 method; A1 answer.



Algebra Notation and Substitution

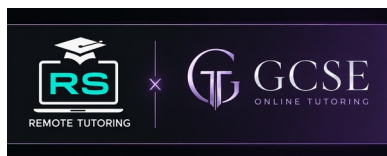
MIXED RETRIEVAL - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$9-6=3$.	2	M1 method; A1 answer.
2	$2y-5$.	1	B1: correct result or statement.
3	7.	1	B1: correct result or statement.
4	$v=3+4\times 5=23$.	2	M1 method; A1 answer.
5	$0.6x+2$.	2	M1 method; A1 answer.



Simplifying, Expanding and Factorising

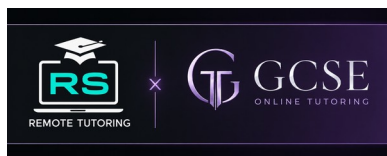
CORE SKILLS • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Marks	Check
1	$8x$.	1	B1: correct result or statement.
2	$5x$.	1	B1: correct result or statement.
3	$5x$.	1	B1: correct result or statement.
4	$9x$.	1	B1: correct result or statement.
5	$3x$.	1	B1: correct result or statement.
6	$6x + 15$.	2	M1 method; A1 answer.
7	$-4x + 28$.	2	M1 method; A1 answer.
8	$18x + -12$.	2	M1 method; A1 answer.



Simplifying, Expanding and Factorising

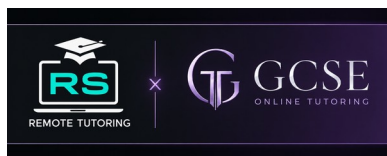
CORE SKILLS • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	$-20x + 45$.	2	M1 method; A1 answer.
10	$16x + 8$.	2	M1 method; A1 answer.
11	$3(2x+3)$.	2	M1 method; A1 answer.
12	$4(2x+3)$.	2	M1 method; A1 answer.
13	$5(2x+3)$.	2	M1 method; A1 answer.
14	$7(2x+3)$.	2	M1 method; A1 answer.
15	$6(2x+3)$.	2	M1 method; A1 answer.



Simplifying, Expanding and Factorising

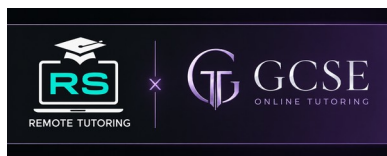
EXAM PRACTICE • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$7x + 1.$	2	M1 method; A1 answer.
2	$11x + -4.$	2	M1 method; A1 answer.
3	$2x + 4.$	2	M1 method; A1 answer.
4	$9x + -1.$	2	M1 method; A1 answer.
5	$8x + -5.$	2	M1 method; A1 answer.
6	$x^2 + 5x + 6.$	3	M1 setup; M1 process; A1 conclusion.
7	$x^2 + 9x + 20.$	3	M1 setup; M1 process; A1 conclusion.
8	$x^2 + 8x + 7.$	3	M1 setup; M1 process; A1 conclusion.



Simplifying, Expanding and Factorising

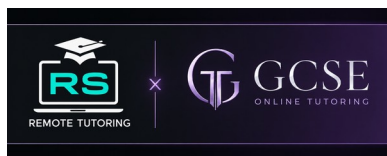
EXAM PRACTICE • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	$x^2+9x+18.$	3	M1 setup; M1 process; A1 conclusion.
10	$x^2+7x+10.$	3	M1 setup; M1 process; A1 conclusion.
11	$(x+2)(x+3).$	3	M1 setup; M1 process; A1 conclusion.
12	$(x+4)(x+6).$	3	M1 setup; M1 process; A1 conclusion.
13	$(x+1)(x+8).$	3	M1 setup; M1 process; A1 conclusion.
14	$(x+5)(x+7).$	3	M1 setup; M1 process; A1 conclusion.
15	$(x+3)(x+9).$	3	M1 setup; M1 process; A1 conclusion.



Simplifying, Expanding and Factorising

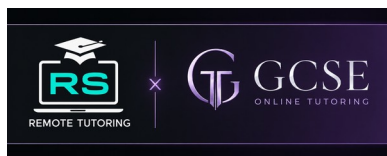
GRADE 4-5 CHALLENGE - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$6x+2.$	3	M1 setup; M1 process; A1 conclusion.
2	$8x+1.$	3	M1 setup; M1 process; A1 conclusion.
3	$10x+-2.$	3	M1 setup; M1 process; A1 conclusion.
4	$8x+7.$	3	M1 setup; M1 process; A1 conclusion.
5	$10x+2.$	3	M1 setup; M1 process; A1 conclusion.
6	Expand: $3n+6+2n-2=5n+4.$	2	M1 method; A1 answer.
7	$6x(2x+3).$	2	M1 method; A1 answer.
8	$x^7.$	1	B1: correct result or statement.
9	$y^5.$	1	B1: correct result or statement.
10	$a^6.$	1	B1: correct result or statement.



Simplifying, Expanding and Factorising

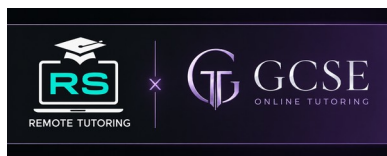
MIXED RETRIEVAL - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$14x - 21$.	2	M1 method; A1 answer.
2	$5(3x + 5)$.	2	M1 method; A1 answer.
3	$3a + 5b$.	2	M1 method; A1 answer.
4	$x^2 + 6x + 8$.	3	M1 setup; M1 process; A1 conclusion.
5	$(x + 4)(x + 5)$.	3	M1 setup; M1 process; A1 conclusion.



Formulae and Linear Equations

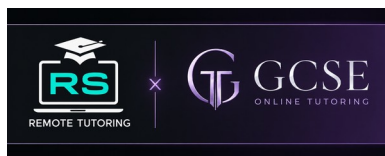
CORE SKILLS • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$3x=15$; $x=5$.	2	M1 method; A1 answer.
2	$4x=20$; $x=5$.	2	M1 method; A1 answer.
3	$5x=25$; $x=5$.	2	M1 method; A1 answer.
4	$6x=24$; $x=4$.	2	M1 method; A1 answer.
5	$7x=35$; $x=5$.	2	M1 method; A1 answer.
6	$2x=12$; $x=6$.	3	M1 setup; M1 process; A1 conclusion.
7	$3x=18$; $x=6$.	3	M1 setup; M1 process; A1 conclusion.
8	$3x=15$; $x=5$.	3	M1 setup; M1 process; A1 conclusion.



Formulae and Linear Equations

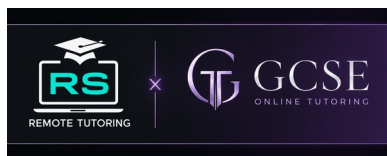
CORE SKILLS • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	$3x=15$; $x=5$.	3	M1 setup; M1 process; A1 conclusion.
10	$3x=15$; $x=5$.	3	M1 setup; M1 process; A1 conclusion.
11	$x+3=9$; $x=6$.	3	M1 setup; M1 process; A1 conclusion.
12	$x+4=10$; $x=6$.	3	M1 setup; M1 process; A1 conclusion.
13	$x+-1=7$; $x=8$.	3	M1 setup; M1 process; A1 conclusion.
14	$x+2=9$; $x=7$.	3	M1 setup; M1 process; A1 conclusion.
15	$x+-3=7$; $x=10$.	3	M1 setup; M1 process; A1 conclusion.



Formulae and Linear Equations

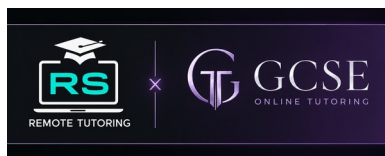
EXAM PRACTICE • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$x = (y - 5) / 3$.	2	M1 method; A1 answer.
2	$r = C / (2\pi)$.	2	M1 method; A1 answer.
3	$2A = bh$; $h = 2A/b$.	3	M1 setup; M1 process; A1 conclusion.
4	$v - u = at$; $t = (v - u)/a$.	3	M1 setup; M1 process; A1 conclusion.
5	$P - 2l = 2w$; $w = (P - 2l)/2$.	3	M1 setup; M1 process; A1 conclusion.
6	$3x + 4 = 40$; $x = 12$.	3	M1 setup; M1 process; A1 conclusion.
7	$3x + 4 = 58$; $x = 18$.	3	M1 setup; M1 process; A1 conclusion.
8	$3x + 4 = 76$; $x = 24$.	3	M1 setup; M1 process; A1 conclusion.



Formulae and Linear Equations

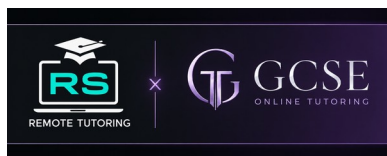
EXAM PRACTICE • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	$3x+4=94$; $x=30$.	3	M1 setup; M1 process; A1 conclusion.
10	$3x+4=112$; $x=36$.	3	M1 setup; M1 process; A1 conclusion.
11	$2(8)+2w=26$; $2w=10$; $w=5$ cm.	3	M1 setup; M1 process; A1 conclusion.
12	$2(10)+2w=34$; $2w=14$; $w=7$ cm.	3	M1 setup; M1 process; A1 conclusion.
13	$2(12)+2w=32$; $2w=8$; $w=4$ cm.	3	M1 setup; M1 process; A1 conclusion.
14	$2(9)+2w=30$; $2w=12$; $w=6$ cm.	3	M1 setup; M1 process; A1 conclusion.
15	$2(15)+2w=36$; $2w=6$; $w=3$ cm.	3	M1 setup; M1 process; A1 conclusion.



Formulae and Linear Equations

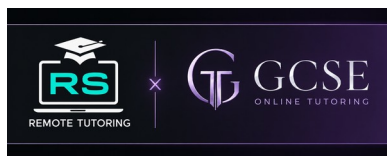
GRADE 4-5 CHALLENGE - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$4x - 8 + 3 = 19$; $4x = 24$; $x = 6$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
2	$x + 5 = 21$; $x = 16$.	3	M1 setup; M1 process; A1 conclusion.
3	$5y = x + 4$; $x = 5y - 4$.	3	M1 setup; M1 process; A1 conclusion.
4	$6x = 180$; $x = 30^\circ$.	3	M1 setup; M1 process; A1 conclusion.
5	$12 + 4g = 40$; $g = 7$.	3	M1 setup; M1 process; A1 conclusion.
6	$6x - 2 = 4x + 10$; $2x = 12$; $x = 6$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
7	$2A = h(a + b)$; $2A/h = a + b$; $b = 2A/h - a$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
8	$x + x/2 = 27$; $3x/2 = 27$; $x = 18$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
9	$s = P/n$.	2	M1 method; A1 answer.
10	Substitute it into both sides and confirm equal values.	2	M1 method; A1 answer.



Formulae and Linear Equations

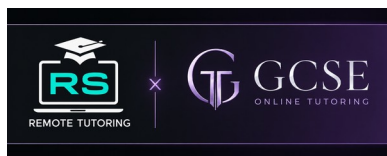
MIXED RETRIEVAL - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$5x=25$; $x=5$.	2	M1 method; A1 answer.
2	$x+4=9$; $x=5$.	2	M1 method; A1 answer.
3	$3x=18$; $x=6$.	3	M1 setup; M1 process; A1 conclusion.
4	$a=(v-u)/t$.	3	M1 setup; M1 process; A1 conclusion.
5	$2x-3=17$; $x=10$.	3	M1 setup; M1 process; A1 conclusion.



Inequalities and Simultaneous Equations

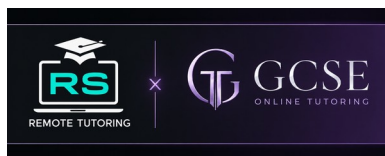
CORE SKILLS • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$2x < 8; x < 4.$	2	M1 method; A1 answer.
2	$3x < 15; x < 5.$	2	M1 method; A1 answer.
3	$4x < 16; x < 4.$	2	M1 method; A1 answer.
4	$5x < 20; x < 4.$	2	M1 method; A1 answer.
5	$6x < 24; x < 4.$	2	M1 method; A1 answer.
6	$2x \geq 8; x \geq 4.$	2	M1 method; A1 answer.
7	$3x \geq 12; x \geq 4.$	2	M1 method; A1 answer.
8	$4x \geq 16; x \geq 4.$	2	M1 method; A1 answer.



Inequalities and Simultaneous Equations

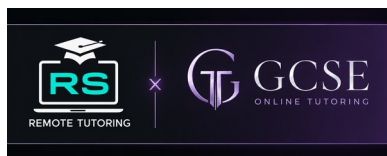
CORE SKILLS • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	$5x \geq 25$; $x \geq 5$.	2	M1 method; A1 answer.
10	$6x \geq 24$; $x \geq 4$.	2	M1 method; A1 answer.
11	$-1, 0, 1, 2, 3$.	2	M1 method; A1 answer.
12	Open circle at 4; shade to the left.	2	M1 method; A1 answer.
13	Closed circle at -1 ; shade to the right.	2	M1 method; A1 answer.
14	$x+2 \leq 6$; $x \leq 4$.	3	M1 setup; M1 process; A1 conclusion.
15	$3x > 12$; $x > 4$.	3	M1 setup; M1 process; A1 conclusion.



Inequalities and Simultaneous Equations

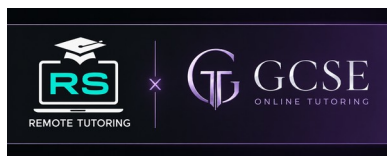
EXAM PRACTICE • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	Eliminate a variable; $x=4$, $y=3$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
2	Eliminate a variable; $x=6$, $y=3$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
3	Eliminate a variable; $x=4$, $y=1$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
4	Eliminate a variable; $x=4.66667$, $y=2.66667$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
5	Eliminate a variable; $x=4$, $y=1$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
6	$a+b=8$, $a-b=-2$; $a=3$, $b=5$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
7	$a+b=6$, $a-b=2$; $a=4$, $b=2$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
8	$a+b=7$, $a-b=5$; $a=6$, $b=1$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.



Inequalities and Simultaneous Equations

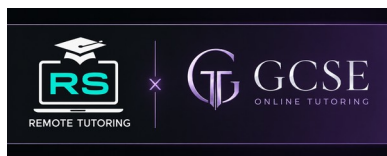
EXAM PRACTICE • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	$a+b=9$, $a-b=-5$; $a=2$, $b=7$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
10	$a+b=9$, $a-b=1$; $a=5$, $b=4$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
11	Divide by -3 and reverse sign: $x > -4$.	3	M1 setup; M1 process; A1 conclusion.
12	$-2x \geq 6$; divide by -2 and reverse: $x \leq -3$.	3	M1 setup; M1 process; A1 conclusion.
13	$3 \leq 3x < 12$; $1 \leq x < 4$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
14	$-2, -1, 0, 1, 2$.	2	M1 method; A1 answer.
15	Closed at -1 , open at 3 , shade between.	2	M1 method; A1 answer.



Inequalities and Simultaneous Equations

GRADE 4-5 CHALLENGE - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	Add: $3x=21$; $x=7, y=6$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
2	Subtract $2(x+y)=12$: $x=4$; $y=2$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
3	$p+b=10$; $2p+5b=32$; $b=4, p=6$.	5	M1 setup; M2-M4 development; A1 conclusion.
4	$a+b=180$; $a-b=36$; $a=108, b=72$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
5	$c+w=18$; $2c+4w=50$; $w=7, c=11$.	5	M1 setup; M2-M4 development; A1 conclusion.
6	Order reverses under reflection about zero; e.g. $2<5$ but $-2>-5$.	2	M1 method; A1 answer.
7	$x<21/4=5.25$; greatest integer 5.	3	M1 setup; M1 process; A1 conclusion.
8	$2x+1=10-x$; $x=3, y=7$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
9	For example $x=6, y=3$ (also 5, 4).	3	M1 setup; M1 process; A1 conclusion.
10	$a+c=20$; $8a+5c=127$; $3a=27$; $a=9, c=11$.	5	M1 setup; M2-M4 development; A1 conclusion.



Inequalities and Simultaneous Equations

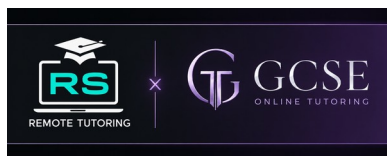
MIXED RETRIEVAL - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$x < 4$.	2	M1 method; A1 answer.
2	$-1, 0, 1, 2$.	2	M1 method; A1 answer.
3	$x \geq 4$.	2	M1 method; A1 answer.
4	$2x = 10$; $x = 5, y = 3$.	3	M1 setup; M1 process; A1 conclusion.
5	Open excludes boundary ($<$ or $>$); closed includes it ($\leq$ or $\geq$).	2	M1 method; A1 answer.



Sequences

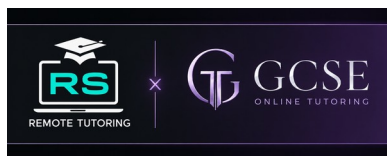
CORE SKILLS • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	11, 14, 17.	2	M1 method; A1 answer.
2	17, 21, 25.	2	M1 method; A1 answer.
3	4, 2, 0.	2	M1 method; A1 answer.
4	12, 17, 22.	2	M1 method; A1 answer.
5	25, 31, 37.	2	M1 method; A1 answer.
6	$4n-1$.	2	M1 method; A1 answer.
7	$3n+4$.	2	M1 method; A1 answer.
8	$-2n+14$.	2	M1 method; A1 answer.



Sequences

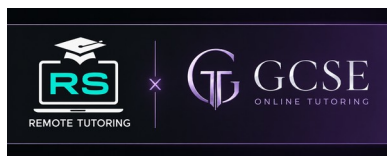
CORE SKILLS • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	$6n-11.$	2	M1 method; A1 answer.
10	$5n+4.$	2	M1 method; A1 answer.
11	$3 \times 20 + 2 = 62.$	2	M1 method; A1 answer.
12	$4 \times 15 - 1 = 59.$	2	M1 method; A1 answer.
13	$5 \times 12 + 3 = 63.$	2	M1 method; A1 answer.
14	$6 \times 10 - 4 = 56.$	2	M1 method; A1 answer.
15	$7 \times 9 + 1 = 64.$	2	M1 method; A1 answer.



Sequences

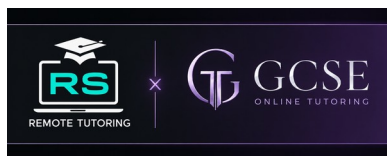
EXAM PRACTICE • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	21, 28.	2	M1 method; A1 answer.
2	49, 64.	1	B1: correct result or statement.
3	8,13,21.	2	M1 method; A1 answer.
4	48,96.	2	M1 method; A1 answer.
5	3,5,7,9.	2	M1 method; A1 answer.
6	Solve $3n+1=31$; $n=10$. Yes, it is in the sequence.	3	M1 setup; M1 process; A1 conclusion.
7	Solve $4n+2=42$; $n=10$. Yes, it is in the sequence.	3	M1 setup; M1 process; A1 conclusion.
8	Solve $5n-2=48$; $n=10$. Yes, it is in the sequence.	3	M1 setup; M1 process; A1 conclusion.



Sequences

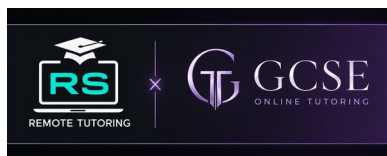
EXAM PRACTICE • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	Solve $6n+3=63$; $n=10$. Yes, it is in the sequence.	3	M1 setup; M1 process; A1 conclusion.
10	Solve $7n-1=69$; $n=10$. Yes, it is in the sequence.	3	M1 setup; M1 process; A1 conclusion.
11	$2n+1$.	2	M1 method; A1 answer.
12	$3n+2$.	2	M1 method; A1 answer.
13	$1n+3$.	2	M1 method; A1 answer.
14	$2n+4$.	2	M1 method; A1 answer.
15	$3n+5$.	2	M1 method; A1 answer.



Sequences

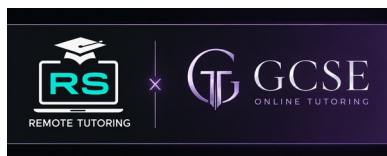
GRADE 4-5 CHALLENGE - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$7n+4$.	2	M1 method; A1 answer.
2	$4n-1=99$; $n=25$.	3	M1 setup; M1 process; A1 conclusion.
3	7,12,19,31,50.	3	M1 setup; M1 process; A1 conclusion.
4	42 (products $n(n+1)$).	3	M1 setup; M1 process; A1 conclusion.
5	$(68)-(38)=30$.	3	M1 setup; M1 process; A1 conclusion.
6	$6n+3=100$ gives $n=97/6$, not integer.	3	M1 setup; M1 process; A1 conclusion.
7	14.	1	B1: correct result or statement.
8	$5 \times 2^7=640$.	3	M1 setup; M1 process; A1 conclusion.
9	Quadratic.	1	B1: correct result or statement.
10	30,26,...,2,-2; -2 is 9th term.	3	M1 setup; M1 process; A1 conclusion.



Sequences

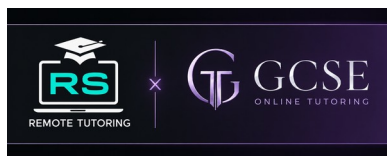
MIXED RETRIEVAL - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$4n+1$.	2	M1 method; A1 answer.
2	58.	2	M1 method; A1 answer.
3	$4n+3=51$; $n=12$, so yes.	3	M1 setup; M1 process; A1 conclusion.
4	21,34.	2	M1 method; A1 answer.
5	Cube numbers.	1	B1: correct result or statement.



Coordinates and Straight-Line Graphs

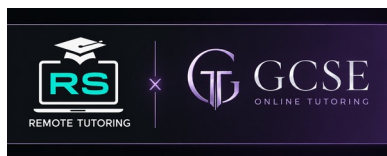
CORE SKILLS • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Marks	Check
1	quadrant 2.	1	B1: correct result or statement.
2	quadrant 4.	1	B1: correct result or statement.
3	y-axis	1	B1: correct result or statement.
4	quadrant 1.	1	B1: correct result or statement.
5	quadrant 3.	1	B1: correct result or statement.
6	$y=2 \times 3+1=7$.	2	M1 method; A1 answer.
7	$y=3 \times 4-2=10$.	2	M1 method; A1 answer.
8	$y=-1 \times 6+5=-1$.	2	M1 method; A1 answer.



Coordinates and Straight-Line Graphs

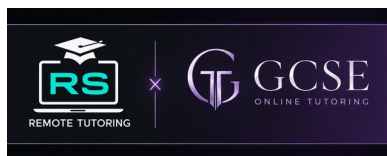
CORE SKILLS • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	$y = 4x - 2 + 0 = -8.$	2	M1 method; A1 answer.
10	$y = 0 \times 10 + 7 = 7.$	2	M1 method; A1 answer.
11	Gradient 2; y-intercept 3.	2	M1 method; A1 answer.
12	Gradient 3; y-intercept -1.	2	M1 method; A1 answer.
13	Gradient -2; y-intercept 4.	2	M1 method; A1 answer.
14	Gradient 1; y-intercept -5.	2	M1 method; A1 answer.
15	Gradient 4; y-intercept 2.	2	M1 method; A1 answer.



Coordinates and Straight-Line Graphs

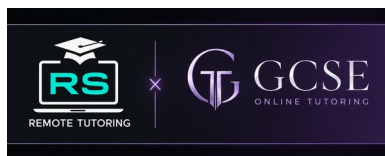
EXAM PRACTICE • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Marks	Check
1	$(0,1), (1,3), (2,5).$	3	M1 setup; M1 process; A1 conclusion.
2	$(0,-2), (1,1), (2,4).$	3	M1 setup; M1 process; A1 conclusion.
3	$(0,4), (1,3), (2,2).$	3	M1 setup; M1 process; A1 conclusion.
4	$(0,0), (1,4), (2,8).$	3	M1 setup; M1 process; A1 conclusion.
5	$(0,5), (1,6), (2,7).$	3	M1 setup; M1 process; A1 conclusion.
6	$m=(8-2)/(3-0)=2.$	2	M1 method; A1 answer.
7	$m=(12-4)/(5-1)=2.$	2	M1 method; A1 answer.
8	$m=(9-1)/(2--2)=2.$	2	M1 method; A1 answer.



Coordinates and Straight-Line Graphs

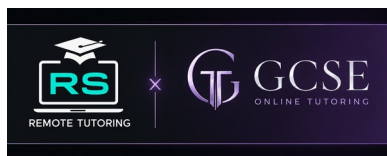
EXAM PRACTICE • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	$m = (5 - -3) / (4 - 0) = 2.$	2	M1 method; A1 answer.
10	$m = (15 - 7) / (6 - 2) = 2.$	2	M1 method; A1 answer.
11	$y = 3x - 4.$	2	M1 method; A1 answer.
12	Any $y = 2x + c$, e.g. $y = 2x - 1.$	2	M1 method; A1 answer.
13	$y = -2x + 6.$	2	M1 method; A1 answer.
14	$0 = 3x - 12$; $x = 4.$	2	M1 method; A1 answer.
15	They are distinct parallel lines, so no.	2	M1 method; A1 answer.



Coordinates and Straight-Line Graphs

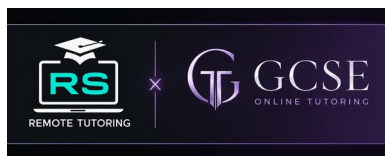
GRADE 4-5 CHALLENGE - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$y-5=2(x-1)$, so $y=2x+3$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
2	$2x+1=-x+10$; $x=3, y=7$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
3	$m=12/6=2$; using point gives $y=2x+5$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
4	$3 \times 3 + 2 = 11$, so yes.	2	M1 method; A1 answer.
5	$((-4+8)/2, (6-2)/2) = (2, 2)$.	3	M1 setup; M1 process; A1 conclusion.
6	$(0-8)/(4-0) = -2$.	3	M1 setup; M1 process; A1 conclusion.
7	$(y-3)/4=2$; $y=11$.	3	M1 setup; M1 process; A1 conclusion.
8	Second rearranges $y=3x-4$; same gradient, so yes.	3	M1 setup; M1 process; A1 conclusion.
9	$y=-2$.	2	M1 method; A1 answer.
10	$x=-3$.	2	M1 method; A1 answer.



Coordinates and Straight-Line Graphs

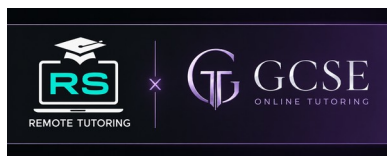
MIXED RETRIEVAL - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: _____ / _____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	13.	1	B1: correct result or statement.
2	-3.	1	B1: correct result or statement.
3	-2.	1	B1: correct result or statement.
4	$(8-2)/(4-1)=2.$	2	M1 method; A1 answer.
5	$y=5x+1.$	2	M1 method; A1 answer.



Quadratic and Real-Life Graphs

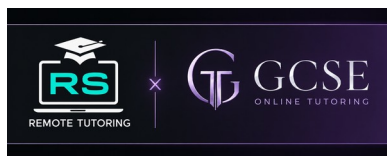
CORE SKILLS • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$y = -3^2 - 4 = 5.$	2	M1 method; A1 answer.
2	$y = -2^2 - 4 = 0.$	2	M1 method; A1 answer.
3	$y = -1^2 - 4 = -3.$	2	M1 method; A1 answer.
4	$y = 0^2 - 4 = -4.$	2	M1 method; A1 answer.
5	$y = 1^2 - 4 = -3.$	2	M1 method; A1 answer.
6	$x = 2$ and $x = 3.$	2	M1 method; A1 answer.
7	$x = 1$ and $x = 5.$	2	M1 method; A1 answer.
8	$x = 4$ and $x = 2.$	2	M1 method; A1 answer.



Quadratic and Real-Life Graphs

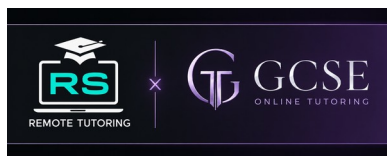
CORE SKILLS • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	$x=3$ and $x=6$.	2	M1 method; A1 answer.
10	$x=5$ and $x=1$.	2	M1 method; A1 answer.
11	(2,1).	2	M1 method; A1 answer.
12	(-3,4).	2	M1 method; A1 answer.
13	(1,-2).	2	M1 method; A1 answer.
14	(0,5).	2	M1 method; A1 answer.
15	(4,0).	2	M1 method; A1 answer.



Quadratic and Real-Life Graphs

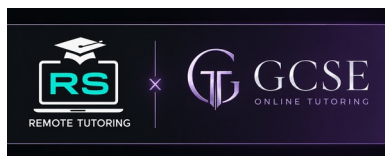
EXAM PRACTICE • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	Upward-opening parabola, symmetric about y-axis.	2	M1 method; A1 answer.
2	Two branches; axes are asymptotes; undefined at $x=0$.	3	M1 setup; M1 process; A1 conclusion.
3	At $x=0$, $y=2$.	1	B1: correct result or statement.
4	$(x-2)(x-3)=0$; roots 2 and 3.	3	M1 setup; M1 process; A1 conclusion.
5	$x=4$.	2	M1 method; A1 answer.
6	Gradient= $120/2=60$ km/h, the speed.	3	M1 setup; M1 process; A1 conclusion.
7	Gradient= $180/3=60$ km/h, the speed.	3	M1 setup; M1 process; A1 conclusion.
8	Gradient= $90/1.5=60$ km/h, the speed.	3	M1 setup; M1 process; A1 conclusion.



Quadratic and Real-Life Graphs

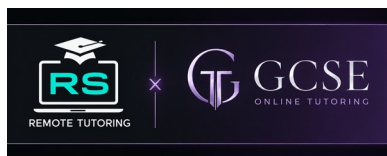
EXAM PRACTICE • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	Gradient= $240/4=60$ km/h, the speed.	3	M1 setup; M1 process; A1 conclusion.
10	Gradient= $150/2.5=60$ km/h, the speed.	3	M1 setup; M1 process; A1 conclusion.
11	Distance is unchanged; the object is stationary.	2	M1 method; A1 answer.
12	Distance is unchanged; the object is stationary.	2	M1 method; A1 answer.
13	Distance is unchanged; the object is stationary.	2	M1 method; A1 answer.
14	Distance is unchanged; the object is stationary.	2	M1 method; A1 answer.
15	Distance is unchanged; the object is stationary.	2	M1 method; A1 answer.



Quadratic and Real-Life Graphs

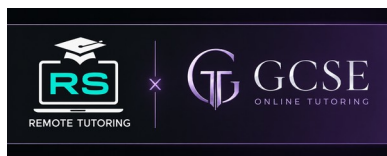
GRADE 4-5 CHALLENGE - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	Intersections of $y=x^2$ and $y=9$ give $x=-3, 3$.	3	M1 setup; M1 process; A1 conclusion.
2	$y=(x+2)(x-5)$.	3	M1 setup; M1 process; A1 conclusion.
3	$x^2 \geq 0$, so $y \geq 4$ and never reaches 0.	2	M1 method; A1 answer.
4	-8.	1	B1: correct result or statement.
5	4.	1	B1: correct result or statement.
6	$(x+4)(x-3)=0$; roots -4, 3.	3	M1 setup; M1 process; A1 conclusion.
7	Midpoint $= (1+6)/2 = 3.5$; $x=3.5$.	2	M1 method; A1 answer.
8	Speed = 60 km/h; total time = 2 h.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
9	Turning point (2, -4); roots 0 and 4; symmetry $x=2$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
10	Both objects are at the same distance at the same time.	2	M1 method; A1 answer.



Quadratic and Real-Life Graphs

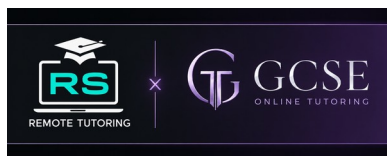
MIXED RETRIEVAL - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$(x-3)(x-4)$; 3,4.	3	M1 setup; M1 process; A1 conclusion.
2	(2,3).	2	M1 method; A1 answer.
3	Stationary.	1	B1: correct result or statement.
4	50 km/h.	2	M1 method; A1 answer.
5	-5.	1	B1: correct result or statement.



MODULE 20 / A7; selected algebra review

Functions and Mixed Algebra

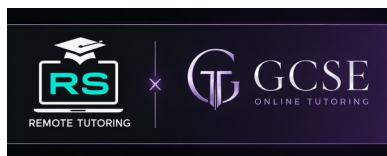
CORE SKILLS • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$2 \times 4 + 3 = 11.$	2	M1 method; A1 answer.
2	$3 \times 5 - 1 = 14.$	2	M1 method; A1 answer.
3	$-2 \times 3 + 6 = 0.$	2	M1 method; A1 answer.
4	$4 \times -1 + 2 = -2.$	2	M1 method; A1 answer.
5	$5 \times 2 - 4 = 6.$	2	M1 method; A1 answer.
6	$2x + 3 = 15; x = 6.$	2	M1 method; A1 answer.
7	$3x - 1 = 20; x = 7.$	2	M1 method; A1 answer.
8	$4x + 2 = 30; x = 7.$	2	M1 method; A1 answer.



Functions and Mixed Algebra

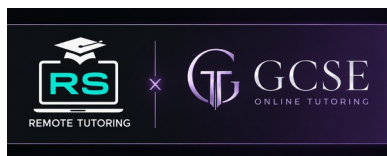
CORE SKILLS • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	$5x-4=21$; $x=5$.	2	M1 method; A1 answer.
10	$6x+1=43$; $x=7$.	2	M1 method; A1 answer.
11	Multiply by 3, then add 5.	1	B1: correct result or statement.
12	Add 3.	2	M1 method; A1 answer.
13	$2x$ is even; even+1 is odd.	2	M1 method; A1 answer.
14	$25-1=24$.	2	M1 method; A1 answer.
15	$-12+2=-10$.	2	M1 method; A1 answer.



MODULE 20 / A7; selected algebra review

Functions and Mixed Algebra

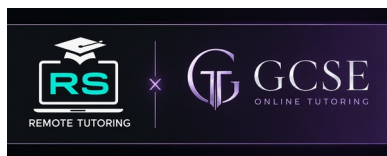
EXAM PRACTICE • PART A - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$8x-2$.	2	M1 method; A1 answer.
2	$4x-12$.	2	M1 method; A1 answer.
3	$3(2x+3)$.	2	M1 method; A1 answer.
4	$x=5$.	2	M1 method; A1 answer.
5	$3n+1$.	2	M1 method; A1 answer.
6	$x=7, y=3$.	3	M1 setup; M1 process; A1 conclusion.
7	$x<5$.	2	M1 method; A1 answer.
8	3.	1	B1: correct result or statement.



Functions and Mixed Algebra

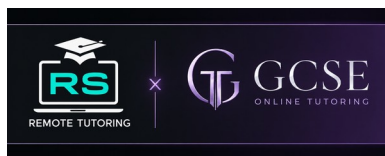
EXAM PRACTICE • PART B - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
9	2,3.	3	M1 setup; M1 process; A1 conclusion.
10	$r = C/(2\pi)$.	2	M1 method; A1 answer.
11	$18 - 6 = 12$.	2	M1 method; A1 answer.
12	$5x + 10$.	3	M1 setup; M1 process; A1 conclusion.
13	$(x+3)(x+4)$.	3	M1 setup; M1 process; A1 conclusion.
14	$2x = 14$; $x = 7$.	3	M1 setup; M1 process; A1 conclusion.
15	Add: $3x = 12$; $x = 4, y = 3$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.



Functions and Mixed Algebra

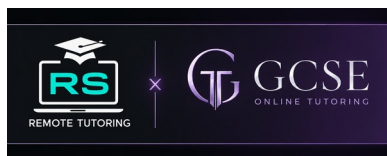
GRADE 4-5 CHALLENGE - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	$5n+3$.	2	M1 method; A1 answer.
2	$y=4x-2$.	2	M1 method; A1 answer.
3	$x=-3, 3$.	2	M1 method; A1 answer.
4	$x \leq 5$.	2	M1 method; A1 answer.
5	$32-3=29$.	2	M1 method; A1 answer.
6	Original $2x-3$; new $2(x+5)-3=2x+7$, an increase of 10.	3	M1 setup; M1 process; A1 conclusion.
7	$6x+2-x=5x+2$.	2	M1 method; A1 answer.
8	$5n-2>100$; $n>20.4$, so $n=21$; term=103.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
9	$2x+1=-x+10$; $x=3, y=7$.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.
10	$2x+2(x+3)=30$; $4x=24$; $x=6$; sides 6, 9.	4	M1 setup; M1 development; A1 accuracy; A1 conclusion.



MODULE 20 / A7; selected algebra review

Functions and Mixed Algebra

MIXED RETRIEVAL - ANSWERS

FOUNDATION TIER • SHOW CLEAR WORKING • WRITE UNITS WHERE REQUIRED

Name: _____ Date: _____ Score: ____ / ____

Use the formula/method guides in the consolidated solutions section. Award method marks where the setup is correct.

Q	Answer / concise method	Mark s	Check
1	11.	1	B1: correct result or statement.
2	7a.	1	B1: correct result or statement.
3	$x=7$.	1	B1: correct result or statement.
4	18.	1	B1: correct result or statement.
5	6.	1	B1: correct result or statement.