

GCSE Maths Mixed Revision

A 36-mark mixed paper: number, algebra, geometry and statistics at Foundation/Higher crossover level.

Name _____ Date _____ Class _____

Learning objective: I can answer a range of GCSE maths questions and show clear working.

✓ I can work with indices and ratio ✓ I can solve quadratics and simultaneous equations ✓ I can use trigonometry

Calculator allowed for section 3 only. Show all your working; method marks are available.

1 Number

- 1 Find the LCM of 21 and 28. [1 mark]

- 2 Work out $10^2 + 9 \times 12$. [1 mark]

- 3 Simplify $2^6 \times 2^4$. Leave your answer as a power of 2. [1 mark]

- 4 Write 0.000 52 in standard form. [1 mark]

- 5 A jacket costs £68 after a 15% reduction. What was the original price? [2 marks]

- 6 Share £240 in the ratio 3 : 5. [2 marks]

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2 Algebra

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

- 8 Factorise $x^2 - 7x + 12$. [2 marks]

- 9 Solve $x^2 - 7x + 12 = 0$. [1 mark]

- 10 Solve the simultaneous equations $3x + 2y = 16$ and $x - y = 2$. [3 marks]

- 11 Find the gradient and y-intercept of $y = 4x - 5$. [2 marks]

- 12 Rearrange $A = \pi r^2$ to make r the subject. [2 marks]

3 Geometry and measures

- 13 A right-angled triangle has shorter sides 9 cm and 12 cm. Find the hypotenuse. [2 marks]

- 14 In a right-angled triangle the hypotenuse is 8 cm and one angle is 35° . Find the side opposite the 35° angle, to 1 d.p. [2 marks]

- 15 A right-angled triangle has opposite side 7 cm and adjacent side 10 cm. Find the angle, to 1 d.p. [2 marks]

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4 Geometry and measures (continued)

- 16 Find the volume of a cylinder with radius 3 cm and height 10 cm. Give your answer to 1 d.p.
[2 marks]

- 17 Find the size of each interior angle of a regular octagon. [2 marks]

5 Statistics and probability

- 18 The table shows the number of pets owned by pupils. Pets: 0, 1, 2, 3; Frequency: 4, 7, 6, 3. Find the mean number of pets. [3 marks]

- 19 A bag has 5 red and 3 blue counters. Two are taken without replacement. Find $P(\text{both red})$.
[2 marks]

- 20 The probability a train is late is 0.15. On how many of 200 days would you expect it to be late?
[1 mark]

6 Topic checklist Tick how confident you feel.

Topic	Confident	Need practice
Indices and standard form		
Reverse percentages and ratio		
Quadratics		
Simultaneous equations		
Pythagoras and trigonometry		
Volume		
Probability		

Answer Key

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Question	Answers
1 Number	1. 84 2. 208 3. 2^{10} 4. 5.2×10^{-4} 5. $£68 \div 0.85 = £80.00$ 6. £90 and £150
2 Algebra	7. $x^2 + x - 12$ 8. $(x - 3)(x - 4)$ 9. $x = 3$ or $x = 4$ 10. $x = 4$, $y = 2$ 11. gradient 4, y-intercept -5 (0, -5) 12. $r = \sqrt{(A \div \pi)}$
3 Geometry and measures	13. $\sqrt{(81 + 144)} = 15$ cm 14. $8 \times \sin 35^\circ = 4.6$ cm 15. $\tan^{-1}(7 \div 10) = 35.0^\circ$
4 Geometry and measures (continued)	16. $\pi \times 3^2 \times 10 = 282.7 \text{ cm}^3$ (90 π) 17. 135°
5 Statistics and probability	18. $28 \div 20 = 1.4$ 19. $5/8 \times 4/7 = 5/14$ 20. $0.15 \times 200 = 30$
6 Topic checklist	Indices and standard form - Confident: —, Need practice: — Reverse percentages and ratio - Confident: —, Need practice: — Quadratics - Confident: —, Need practice: — Simultaneous equations - Confident: —, Need practice: — Pythagoras and trigonometry - Confident: —, Need practice: — Volume - Confident: —, Need practice: — Probability - Confident: —, Need practice: —

Teaching note: total 36 marks. Questions are original and sit at Foundation/Higher crossover level (about grades 4–6). Answers were calculated in code; accept equivalent forms and correctly rounded values.