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## Year 9 End-of-Year Maths

Paper 08 | KS3 | 50 marks

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Suggested time: 60 minutes. Total marks: 50.

Answer all 30 questions. No calculator. Show your working.

Questions 1-10: 1 mark each. Questions 11-30: 2 marks each.

These original practice papers sample the curriculum; they are not official national tests.

Topics and difficulty become more demanding through the paper.

Tutor: use alongside classwork and adapt to the topics already taught.

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. Calculate  $-10 + 17$ . [1 mark]

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2. Calculate  $10 - 21$ . [1 mark]

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3. Calculate  $10 + 11 \times 4$ . [1 mark]

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4. Simplify  $x^{10} \times x^3 / x^2$ , for non-zero  $x$ . [1 mark]

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5. Write 120 as a product of prime factors. [1 mark]

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6. Write 2160000 in standard form. [1 mark]

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7. Calculate  $\frac{2}{11} + \frac{1}{22}$ . [1 mark]

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8. Calculate  $\frac{10}{11} \times \frac{3}{12}$ . [1 mark]

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9. Calculate  $1.76 \times 4$ . [1 mark]

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10. Find 25% of 216. [1 mark]

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11. A coat costs GBP 216. Its price is reduced by 20%. Find the new price. [2 marks]

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12. Share 1080 in the ratio 2:3. [2 marks]

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13. 10 identical notebooks cost GBP 20. Find the cost of 11 notebooks. [2 marks]

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14. Simplify  $10x + 11x - 2x$ . [2 marks]

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15. Factorise  $x^2 + 21x + 110$ . [2 marks]

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16. Solve simultaneously  $x + y = 21$  and  $2x + y = 31$ . [2 marks]

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17. A sequence begins 11, 21, 31, 41. Find its  $n$ th-term rule and 20th term. [2 marks]

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18. Rearrange  $y = 10x - 11$  to make  $x$  the subject. [2 marks]

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19. A regular polygon has 13 sides. Find each exterior angle as an exact value. [2 marks]

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20. A circle has radius 10 cm. Find its circumference and area in terms of  $\pi$ . [2 marks]

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21. A parallelogram has base 20 cm and perpendicular height 11 cm. Find its area. [2 marks]

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22. A right-angled triangle has perpendicular sides 30 cm and 40 cm. Find its hypotenuse. [2 marks]

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23. Translate  $(-10, 11)$  by 13 units right and 13 units down. [2 marks]

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24. A shape is enlarged by scale factor 3 about the origin. Where does  $(10, -11)$  map to? How does its area change? [2 marks]

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

25. Find the mean, median and range of 8, 10, 12, 14, 16. [2 marks]

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26. A bag has 10 red and 11 blue counters. Find  $P(\text{red})$  for one random draw. [2 marks]

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27. A bag has 10 red and 11 blue counters. Two are drawn without replacement. Find  $P(\text{both red})$ . [2 marks]

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28. A car travels 30 km in 10 minutes. Find its average speed in km/h. [2 marks]

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29. A club sells 10 adult tickets at GBP 8 and 11 child tickets at GBP 5. Costs are GBP 53. Find the profit. [2 marks]

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30. A rectangle has width 10 cm and length 11 cm. Both dimensions are doubled. Explain how its area changes. Find the new area. [2 marks]

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