

## Questions Only

### Day 1 – Number & Place Value Reasoning

1. I am a 4-digit number. My thousands digit is 3, the hundreds digit is double the tens digit, and my ones digit is 5. What number am I?
2. Round 7,368 to the nearest hundred. Explain your reasoning.
3. The number 35,472 is rounded to the nearest thousand. What is it and why?
4. Order these numbers from smallest to largest: 5,432; 5,423; 5,342; 5,324. Explain your method.
5. A number is a multiple of 8. It is between 50 and 60. What number is it?
6. Convert 0.625 to a fraction and explain your steps.
7. Which of these numbers are prime: 11, 15, 17, 20? Explain your choice.
8. If you add 2,500 to 13,478, what is the result? How can you check?
9. Write the number that is 100 less than 8,003 and explain your reasoning.
10. How many tens are there in 3,560? Explain your method.

### Day 2 – Calculations Reasoning

11. A shop sold 345 pencils on Monday and 678 on Tuesday. How many pencils were sold in total?
12. From 1,000 biscuits, 478 were eaten. How many are left?
13. Multiply 56 by 24 using a method you can explain.
14. Divide 432 by 12. Show your reasoning.
15. Solve:  $3 \times (45 + 12)$ . Explain each step.
16. Subtract 1,678 from 3,245 and explain how you solved it.
17. Multiply  $125 \times 8$  and show a method to check your answer.
18. Divide 2,340 by 6 using long division or another method.
19. Add  $4.35 + 2.68$  and explain your method.
20. Subtract  $7.5 - 3.25$  using a number line or written method.

### Day 3 – Fractions, Decimals & Percentages Reasoning

21. Write  $\frac{3}{4}$  as a decimal. Explain how you know.
22. What is 25% of 200? Show your working.
23. Simplify  $\frac{12}{16}$  and explain your reasoning.
24. Add  $\frac{1}{2} + \frac{3}{8}$  and show your working.
25. Subtract  $\frac{7}{10} - \frac{2}{5}$  using a common denominator.
26. Convert 0.6 to a fraction.
27. What fraction of 24 is 6? Explain your steps.
28. 40% of 50 is what? Show your working.
29. Order these decimals: 0.5, 0.45, 0.55. Explain your reasoning.

30. Convert  $\frac{3}{5}$  to a percentage and explain your method.

## Day 4 – Ratio, Proportion & Algebra Reasoning

31. The ratio of red to blue balls is 3:4. If there are 12 red balls, how many blue balls?

32. Solve for  $x$ :  $x + 7 = 12$  and explain your reasoning.

33. Solve  $5x = 35$  and show how you know your answer is correct.

34. If  $a:b = 2:3$  and  $a = 8$ , what is  $b$ ? Explain your method.

35. Write an expression for '7 more than a number  $y$ '.

36. Solve  $3y - 5 = 10$  and explain each step.

37. The ratio of cats to dogs is 5:2. There are 10 dogs. How many cats?

38. If 4 pencils cost £2, how much for 10 pencils? Show your working.

39. Simplify  $3x + 2x - 5$  and explain your reasoning.

40. Solve  $2(x + 4) = 14$  and explain each step.

## Day 5 – Measurement & Geometry Reasoning

41. Convert 2.5 km to metres and explain your method.

42. A rectangle is 8 cm by 5 cm. Find its perimeter and explain your reasoning.

43. A triangle has base 6 cm and height 4 cm. Find its area.

44. Convert 3 hours 45 minutes into minutes and explain your steps.

45. Find the volume of a cuboid 3 cm  $\times$  4 cm  $\times$  5 cm.

46. Two angles of a triangle are  $50^\circ$  and  $60^\circ$ . Find the third angle.

47. Draw a line of symmetry for a rectangle.

48. Convert 1,500 ml to litres.

49. Find the mean of 3, 7, 9, 11, 10 and explain how you calculated it.

50. Calculate the perimeter of a square with side 9 cm and explain your method.

## Day 6 – Statistics & Problem Solving Reasoning

51. A bag contains 5 red, 8 blue, and 7 green marbles. How many in total?

52. A bag contains 3 red and 2 blue sweets. What fraction is red?

53. Calculate the mode of these numbers: 3, 5, 3, 7, 9, 3, 5

54. Find the median of 4, 6, 8, 10, 12

55. If 5 pens cost £3, how much do 8 pens cost?

56. A train travels 120 km in 2 hours. What is its speed?

57. Draw a pictogram for: apples 3, bananas 5, cherries 2

58.  $\pounds 12 \div 3 = ?$  per child

59. A shop sells 15 notebooks per day. How many in a week?

60. A spinner has 8 sections. 3 are red. Probability of landing on red?

## Day 7 – Mixed Reasoning SATs Questions

61.  $\frac{3}{4}$  of a number is 12. What is the number?

62. Solve  $2x + 5 = 15$  and show your method.

63. Round 4,678 to the nearest thousand. Explain why.
64. 15% of £60. Show your working.
65. A bag weighs 2.5 kg and another 3.4 kg. Total weight?
66. Solve  $8 \times 7 + 36 \div 6$  step by step.
67.  $72 \div ? = 8$ . Find the missing number.
68. Triangle angles are in ratio 2:3:5. Find all angles.
69. How many cm in 3.2 metres?
70. A rectangle has length 12 cm and width 7 cm. Find the area.

## Answers Only (Reasoning)

**Day 1:** 1. 3,425 2. 7,400 3. 35,000 4. 5,324; 5,342; 5,423; 5,432 5. 56 6.  $\frac{5}{8}$  7. 11, 17 8. 15,978 9. 7,903 10. 356 tens

**Day 2:** 11. 1,023 12. 522 13. 1,344 14. 36 15. 171 16. 1,567 17. 1,000 18. 390 19. 7.03 20. 4.25

**Day 3:** 21. 0.75 22. 50 23.  $\frac{3}{4}$  24.  $\frac{7}{8}$  25.  $\frac{3}{10}$  26.  $\frac{3}{5}$  27.  $\frac{1}{4}$  28. 20 29. 0.45, 0.5, 0.55 30. 60%

**Day 4:** 31. 16 32. 5 33. 7 34. 12 35.  $y + 7$  36. 5 37. 25 38. £5 39.  $5x - 5$  40. 3

**Day 5:** 41. 2,500 m 42. 26 cm 43.  $12 \text{ cm}^2$  44. 225 mins 45.  $60 \text{ cm}^3$  46.  $70^\circ$  47. Vertical or horizontal line through midpoints 48. 1.5 L 49. 8 50. 36 cm

**Day 6:** 51. 20 52.  $\frac{3}{5}$  53. 3 54. 8 55. £4.80 56. 60 km/h 57. Proportional symbols 58. £4 59. 105 60.  $\frac{3}{8}$

**Day 7:** 61. 16 62. 5 63. 5,000 64. £9 65. 5.9 kg 66. 62 67. 9 68.  $36^\circ$ ,  $54^\circ$ ,  $90^\circ$  69. 320 cm 70.  $84 \text{ cm}^2$