11+ Maths Practice Questions

Fifteen questions, with every answer worked on the last pages

11+ maths practice set A: number and calculation

1 **Fractions and percentages of amounts**

What is ⅜ of 96 added to 25% of 64? A) 44 B) 48 C) 52 D) 56 E) 60

2 **Rounding large numbers**

Round 4,596,381 to the nearest ten thousand.

3 **Missing numbers**

7 × □ − 18 = 45

4 **Remainders and common multiples**

What is the smallest number greater than 1 that leaves a remainder of 1 when divided by 2, 3, 4, 5 or 6?

5 **Comparing fractions and decimals**

Which is largest? A) ⅝ B) 0.6 C) 13/20 D) 7/12

11+ maths practice set B: problem solving and algebra

6 **Pens and rulers**

A pen costs p pence. A ruler costs 15p more than a pen. Three pens and two rulers cost £1.80 altogether. How much does one pen cost?

7 **Ages**

Sam is three times as old as his sister. In 4 years he will be twice as old as her. How old is Sam now?

8 **Sequences**

What comes next? 3, 7, 15, 31, ...

9 **Sharing in a ratio**

Mia and Tom share 84 sweets in the ratio 3 : 4. How many more sweets does Tom get than Mia?

10 **Up, then down**

A coat costs £60. Its price rises by 20%, then the new price is cut by 20% in a sale. What is the sale price?

11+ maths practice set C: measurement, geometry and data

11 **Time**

A train leaves at 14:47 and the trip takes 1 hour 38 minutes. When does it arrive?

12 **Perimeter to area**

A rectangle has a perimeter of 34 cm and one side of 12 cm. What is its area?

13 **Isosceles triangles**

One angle of an isosceles triangle is 40°. What could the other two be? Give both answers.

14 **The mean**

The mean of five numbers is 12. Four of them are 8, 15, 10 and 14. What is the fifth?

15 **Cubes in a box**

How many cubes with 2 cm edges fit exactly inside a box measuring 10 cm × 6 cm × 4 cm?

Answers

1. C) 52. 96 ÷ 8 = 12, × 3 = 36. 25% of 64 is 64 ÷ 4 = 16. 36 + 16 = 52. Watch for: Dividing by the numerator. The denominator says what to divide by.

2. 4,600,000. The ten-thousands digit is 9 and the next digit is 6, so round up: 59 ten-thousands becomes 60. Watch for: Writing 4,590,000 or 4,500,000 when the 9 rolls over.

3. 9. Work backwards: 45 + 18 = 63, and 63 ÷ 7 = 9.

4. 61. It is one more than a common multiple of all five. The lowest common multiple is 60 (it needs 2 × 2, 3 and 5), so 60 + 1 = 61. Check: 61 ÷ 4 = 15 r 1.

5. C) 13/20. As decimals: 0.625, 0.6, 0.65 and about 0.583. Twentieths convert quickly to hundredths: 13/20 = 65/100.

6. 30p. Without the extra 15p on each ruler, five items would cost 180 − 30 = 150p, so 30p each. Algebra: 3p + 2(p + 15) = 180, 5p = 150. Check: 90 + 90 = 180.

7. 12. Try the sister at 4: Sam is 12. In four years, 8 and 16, and 16 is double 8.

8. 63. Each term doubles and adds 1: 31 × 2 + 1. Or: the gaps 4, 8, 16 double, so the next gap is 32.

9. 12 more. Seven parts, so each is 84 ÷ 7 = 12. Mia 36, Tom 48. The difference is exactly one part. Watch for: Answering 48, the share, when the question asks how many more.

10. £57.60. £60 + £12 = £72; 20% of £72 is £14.40; £72 − £14.40 = £57.60. Watch for: Answering £60. The decrease is 20% of a bigger number, so it removes more than the rise added.

11. 16:25. 14:47 + 1 hour = 15:47. Thirteen minutes reaches 16:00, leaving 25 more. Watch for: Adding times like decimals and writing 16:85.

12. 60 cm². The two 12 cm sides make 24, leaving 10 cm for the other two, so 5 cm each. 12 × 5 = 60.

13. 40° and 100°, or 70° and 70°. If 40° is one of the equal pair, the third is 100°. If it is the odd one, the other two share 140°. Watch for: Stopping at one case. 11+ papers reward checking for a second.

14. 13. The total is 12 × 5 = 60. The four known numbers make 47, and 60 − 47 = 13.

15. 30. Along each edge: 5, 3 and 2 cubes, and 5 × 3 × 2 = 30. Watch for: Dividing the volumes. It works here only because every edge divides exactly by 2; counting along the edges always works.

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