

11 PLUS · MATHS AND REASONING

11 Plus reasoning starter pack

A short set of original numerical, verbal and logical reasoning questions. It does not predict an admission outcome.

How to use this pack

Attempt the questions without searching for an answer. Show working where appropriate. Check the answer section only after completing a full section.

SECTION 1

Numerical reasoning

Look for a rule, show each stage and check whether your answer fits the information.

1. Find the next two terms: 5, 9, 17, 33, ...

2. Five identical notebooks cost £7.50. What is the cost of eight notebooks?

3. Red and yellow counters are in the ratio 4:7. There are 55 counters. How many are red?

4. A number is multiplied by 3 and then 8 is added. The result is 50. What was the number?

SECTION 2

Verbal and logical reasoning

Read every word. For code questions, apply the same rule to each letter.

1. Choose the word closest in meaning to concise: lengthy, brief, uncertain or cheerful.

2. Choose the word opposite in meaning to expand: reduce, explain, extend or improve.

3. Each letter moves two places forward. COLD becomes EQNF. Encode MATH.

4. All vims are quiet. Some quiet things are green. Which statement must be true: all vims are green; some vims are green; no green thing is a vim; or all vims are quiet?

SECTION 3

Multi-step and spatial reasoning

Translate each condition into a small diagram or ordered list before choosing an answer.

1. A rectangle is 12 cm by 7 cm. Its length increases by 3 cm and its width decreases by 2 cm. Find the new area.

2. The mean of four scores is 18. Three scores are 12, 17 and 21. Find the fourth score.

3. Aisha is taller than Ben. Ben is taller than Chen. Dev is shorter than Chen. Who must be the tallest?

4. A train leaves at 09:47 and arrives at 11:23. How long is the journey?

ANSWERS AND METHODS

Check the method, not only the final answer

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| 1. 65, 129. Each term doubles and then subtracts 1: $33 \times 2 - 1 = 65$; $65 \times 2 - 1 = 129$. |
| 2. £12.00. One notebook costs $\pounds 7.50 \div 5 = \pounds 1.50$; eight cost £12. |
| 3. 20 red counters. There are 11 ratio parts; each part is $55 \div 11 = 5$. Red = 4×5 . |
| 4. 14. Reverse the operations: $50 - 8 = 42$, then $42 \div 3 = 14$. |
| 1. Brief. Concise means expressing something in few words. |
| 2. Reduce. Expand means make larger; reduce means make smaller. |
| 3. OCVJ. $M \rightarrow O$, $A \rightarrow C$, $T \rightarrow V$ and $H \rightarrow J$. |
| 4. All vims are quiet. This is the only statement guaranteed by the information given. |
| 1. 75 cm^2 . The new dimensions are 15 cm and 5 cm, so area = 15×5 . |
| 2. 22. The total of four scores is $4 \times 18 = 72$. The known scores total 50, so the missing score is 22. |
| 3. Aisha. Aisha is taller than Ben, Ben is taller than Chen and Chen is taller than Dev. |
| 4. 1 hour 36 minutes. From 09:47 to 10:47 is one hour, then to 11:23 is another 36 minutes. |