



# 11+ Problem-Solving Pack

*Test your skills • Challenge yourself • Build confidence*

Suitable for GL, Independent Schools, and  
Grammar School Preparation

# ACUMEN TEACH

## FREE 11+ Problem-Solving Pack

20 Questions · Mixed Topics · Mixed Maths Topics Sharpen your number skills. Improve mental calculation. Build confidence for the 11+.

Suggested time: 25 minutes

Total marks: 20

Calculator: Not allowed

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

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

### Instructions

This pack is designed to develop the problem-solving skills needed for 11+ maths exams.

Some questions require more than one step. You may need to work backwards, compare quantities, recognise patterns or decide which information is important.

- Read each question carefully.
- Choose one answer: A, B, C or D.
- Show your working on scrap paper if needed.
- Do not rush into calculations before understanding the problem.
- Each correct answer earns 1 mark.

## Section 1 — Problem-Solving Questions

1 mark per question

### Question 1 — Shopping and Money

A family buys 3 adult cinema tickets costing £8 each and 2 child tickets costing £5 each.

They pay with a £40 note.

How much change do they receive?

- A. £4
- B. £6
- C. £8
- D. £10

### Question 2 — Time and Timetables

A train leaves a station at 09:48. The journey takes 1 hour and 37 minutes.

At what time does the train arrive?

- A. 11:15
- B. 11:20
- C. 11:25
- D. 11:35

### Question 3 — Multi-Step Arithmetic

A school orders 8 boxes of pencils. Each box contains 12 pencils.

After 17 pencils are given to pupils, how many pencils remain?

- A. 69
- B. 79

- C. 86
- D. 96

#### **Question 4 — Working Backwards**

I think of a number. I multiply it by 2 and then add 9. My final answer is 35.

What was my original number?

- A. 11
- B. 12
- C. 13
- D. 17

#### **Question 5 — Ratio in Real Life**

A recipe uses flour and sugar in the ratio 5:2.

If 750 g of flour is used, how much sugar is needed?

- A. 150 g
- B. 250 g
- C. 300 g
- D. 375 g

#### **Question 6 — Discounts**

A jacket originally costs £45. A shop offers a discount of 20%.

What is the sale price?

- A. £9
- B. £25
- C. £35
- D. £36

### **Question 7 — Perimeter and Missing Lengths**

A rectangular garden has a perimeter of 54 metres. Its length is 16 metres.

What is its width?

- A. 9 m
- B. 11 m
- C. 22 m
- D. 27 m

### **Question 8 — Recognising Patterns**

Look at the sequence:

2, 6, 12, 20, 30, ...

What is the next number?

- A. 36
- B. 40
- C. 42
- D. 44

### **Question 9 — Averages and Missing Information**

A pupil's mean score across four tests is 18.

The first three scores are 14, 17 and 20.

What was the fourth score?

- A. 19
- B. 20
- C. 21
- D. 23

**Question 10 — Fractions in a Word Problem**

A bus has 48 passengers. At a stop,  $\frac{3}{8}$  of the passengers get off.

How many passengers remain on the bus?

- B. 24
- C. 30
- D. 36

**Question 11 — Logical Counting**

A rectangular board has 7 rows of tiles, with 9 tiles in each row.

One-third of all the tiles are blue. Every other tile is red.

How many tiles are red?

- A. 21
- B. 28
- C. 42
- D. 49

**Question 12 — Units and Capacity**

Five containers each hold 1.5 litres of water.

How much water do they hold altogether, in millilitres?

- A. 750 ml
- B. 1,500 ml
- C. 5,000 ml
- D. 7,500 ml

### Question 13 — Guaranteed Outcomes

A bag contains counters in three colours: red, blue and yellow.

There are plenty of counters of each colour. Without looking, what is the smallest number of counters you must take out to guarantee that at least two are the same colour?

- A. 2
- B. 3
- C. 4
- D. 6

### Question 14 — Finding the Whole

Three-fifths of a number is 42.

What is the number?

- A. 25.2
- B. 63
- C. 70
- D. 75

### Question 15 — Rates and Work

Four workers can pack 96 boxes in 3 hours. All workers pack boxes at the same constant rate.

How many boxes can 2 workers pack in 4 hours?

- A. 32
- B. 48
- C. 64
- D. 96

### Question 16 — Fencing Costs

A rectangular garden is 12 metres long and 8 metres wide.

Fencing costs £3 per metre. How much will it cost to fence the entire garden, with no gaps?

- A. £60
- B. £72
- C. £96
- D. £120

### Question 17 — Comparing Two Numbers

The difference between two numbers is 18. The smaller number is 27.

What is the larger number?

- A. 9
- B. 35
- C. 45
- D. 54

### Question 18 — Division in Context

A jug contains 2.4 litres of juice. The juice is poured into cups that each hold 150 ml.

How many completely full cups can be filled?

- A. 12
- B. 15
- C. 16
- D. 18

### Question 19 — A Multi-Step Class Problem

A class has 28 pupils. Three-sevenths of the pupils walk to school.

Of the pupils who do not walk, one-quarter cycle to school.

Everyone else travels by car or bus.

How many pupils travel by car or bus?

- A. 4
- B. 8
- C. 12
- D. 16

### Question 20 — Consecutive Numbers

Three consecutive whole numbers add up to 72.

What is the middle number?

- A. 22
- B. 23
- C. 24
- D. 25

## Section 2 — Your Answer Sheet

Write the letter of your chosen answer beside each question.

| Question | Answer | Question | Answer |
|----------|--------|----------|--------|
| 1        |        | 11       |        |
| 2        |        | 12       |        |
| 3        |        | 13       |        |
| 4        |        | 14       |        |
| 5        |        | 15       |        |
| 6        |        | 16       |        |
| 7        |        | 17       |        |
| 8        |        | 18       |        |
| 9        |        | 19       |        |
| 10       |        | 20       |        |

My final score: \_\_\_\_\_ / 20

Time taken: \_\_\_\_\_ minutes

## **REFLECT ON YOUR PERFORMANCE**

Tick the statement that best describes your experience.

☐ I completed all 20 questions within 25 minutes.

☐ I answered most questions correctly but need more speed.

☐ I worked quickly but made some calculation errors.

Keep your score so you can compare your progress when you complete another practice pack.

## **STOP — CHECK YOUR ANSWERS ONLY AFTER FINISHING**

Have you answered all 20 questions?

Take a moment to check your answer sheet. When you are ready, continue to the worked solutions.

## Section 3 — Fully Worked Solutions

### Question 1 — Answer B: £6

First calculate the adult tickets:

$$3 \times £8 = £24$$

Then calculate the child tickets:

$$2 \times £5 = £10$$

Total cost:

$$£24 + £10 = £34$$

Change:

$$£40 - £34 = £6$$

**Key skill:** Calculate each part of the cost before finding the change.

### Question 2 — Answer C: 11:25

The train leaves at 09:48.

Add 1 hour:

$$09:48 + 1 \text{ hour} = 10:48$$

Add 37 minutes:

$$10:48 + 12 \text{ minutes} = 11:00$$

There are 25 minutes still to add.

$$11:00 + 25 \text{ minutes} = 11:25$$

**Key skill:** Break a time calculation into manageable steps, especially when crossing an hour.

**Question 3 — Answer B: 79**

First find the total number of pencils:

$$8 \times 12 = 96$$

Then subtract the pencils given away:

$$96 - 17 = 79$$

**Key skill:** Find the original total before subtracting what is used.

**Question 4 — Answer C: 13**

Work backwards by reversing each operation.

The final answer is 35.

First subtract 9:

$$35 - 9 = 26$$

Then divide by 2:

$$26 \div 2 = 13$$

The original number was **13**.

**Key skill:** Reverse the operations in the opposite order.

**Question 5 — Answer C: 300 g**

The ratio of flour to sugar is 5:2.

Five parts represent 750 g.

One part:

$$750 \div 5 = 150 \text{ g}$$

Sugar represents two parts:

$$150 \times 2 = 300 \text{ g}$$

**Key skill:** Find the value of one ratio part before calculating the required amount.

**Question 6 — Answer D: £36**

First calculate 10% of £45:

$$£45 \div 10 = £4.50$$

Therefore, 20% is:

$$£4.50 \times 2 = £9$$

Subtract the discount from the original price:

$$£45 - £9 = £36$$

**Key skill:** A discount is the amount taken off, not the final price.

**Question 7 — Answer B: 11 m**

A rectangle has two equal lengths and two equal widths.

The two lengths total:

$$16 + 16 = 32 \text{ m}$$

Subtract this from the perimeter:

$$54 - 32 = 22 \text{ m}$$

The two widths together measure 22 m.

Therefore, one width is:

$$22 \div 2 = 11 \text{ m}$$

**Key skill:** Remove the known sides from the perimeter, then divide the remainder by 2.

**Question 8 — Answer C: 42**

Look at the differences between the numbers:

2 to 6: add 4

6 to 12: add 6

12 to 20: add 8

20 to 30: add 10

The amount added increases by 2 each time.

The next step is to add 12:

$$30 + 12 = 42$$

**Key skill:** Compare the differences between consecutive terms rather than looking only at the numbers themselves.

**Question 9 — Answer C: 21**

The mean is 18 across four tests.

The total score must be:

$$18 \times 4 = 72$$

Add the three known scores:

$$14 + 17 + 20 = 51$$

Subtract from the total:

$$72 - 51 = 21$$

The missing score is **21**.

**Key skill:** When the mean is known, multiply it by the number of values to find the total.

**Question 10 — Answer C: 30**

First find  $\frac{3}{8}$  of 48:

$$48 \div 8 = 6$$

$$6 \times 3 = 18$$

So, 18 passengers get off.

Subtract from the original number:

$$48 - 18 = 30$$

**Key skill:** Calculate the fraction that leaves, then subtract it from the original total.

**Question 11 — Answer C: 42**

First calculate the total number of tiles:

$$7 \times 9 = 63$$

One-third are blue:

$$63 \div 3 = 21$$

The remaining tiles are red:

$$63 - 21 = 42$$

**Key skill:** Find the total first, then calculate the part and the remainder.

**Question 12 — Answer D: 7,500 ml**

Each container holds 1.5 litres.

Total volume:

$$5 \times 1.5 = 7.5 \text{ litres}$$

Convert litres into millilitres:

$$7.5 \times 1,000 = 7,500 \text{ ml}$$

**Key skill:** Multiply the amount in one container by the number of containers, then convert units.

**Question 13 — Answer C: 4**

There are three possible colours: red, blue and yellow.

In the worst-case scenario, the first three counters could all be different:

- First counter: red
- Second counter: blue
- Third counter: yellow

The fourth counter must be one of these three colours. Therefore, it must match at least one of the first three counters.

The minimum number is **4**.

**Key skill:** For guarantee questions, consider the situation that delays the required outcome for as long as possible.

**Question 14 — Answer C: 70**

Three-fifths of the number is 42.

First find one-fifth:

$$42 \div 3 = 14$$

The whole number is five-fifths:

$$14 \times 5 = 70$$

**Key skill:** If a fraction of a number is known, divide by the numerator to find one part, then multiply by the denominator.

**Question 15 — Answer C: 64**

Four workers working for 3 hours provide:

$$4 \times 3 = 12 \text{ worker-hours}$$

In those 12 worker-hours, they pack 96 boxes.

Boxes packed per worker-hour:

$$96 \div 12 = 8$$

Two workers working for 4 hours provide:

$$2 \times 4 = 8 \text{ worker-hours}$$

Total boxes:

$$8 \times 8 = 64$$

**Key skill:** Compare the total amount of work using both the number of workers and the time worked.

**Question 16 — Answer D: £120**

First calculate the perimeter of the garden:

$$12 + 8 + 12 + 8 = 40 \text{ metres}$$

Fencing costs £3 per metre.

Total cost:

$$40 \times £3 = £120$$

**Key skill:** Calculate the full perimeter before multiplying by the cost per metre.

**Question 17 — Answer C: 45**

The larger number is 18 greater than the smaller number.

$$\text{Smaller number} = 27$$

Larger number:

$$27 + 18 = 45$$

**Key skill:** The difference tells you how far apart the numbers are.

**Question 18 — Answer C: 16**

Convert the juice into millilitres:

$$2.4 \text{ litres} = 2,400 \text{ ml}$$

Divide by the capacity of each cup:

$$2,400 \div 150 = 16$$

Therefore, 16 completely full cups can be filled.

**Key skill:** Convert to the same units before dividing.

**Question 19 — Answer C: 12**

First calculate the number who walk:

$$28 \div 7 = 4$$

$$4 \times 3 = 12 \text{ pupils walk.}$$

Pupils who do not walk:

$$28 - 12 = 16$$

One-quarter of these pupils cycle:

$$16 \div 4 = 4$$

The rest travel by car or bus:

$$16 - 4 = 12$$

**Key skill:** Follow the information in order. The one-quarter applies to pupils who do not walk, not to the entire class.

**Question 20 — Answer C: 24**

Three consecutive whole numbers have a difference of 1.

The middle number is the average of the three numbers.

$$72 \div 3 = 24$$

The three numbers are:

23, 24 and 25

Check:

$$23 + 24 + 25 = 72$$

The middle number is **24**.

**Key skill:** For three consecutive numbers, divide their total by 3 to find the middle number.

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## SECTION 4: ANSWER KEY

1. B — £6
  2. C — 11:25
  3. B — 79
  4. C — 13
  5. C — 300 g
  6. D — £36
  7. B — 11 m
  8. C — 42
  9. C — 21
  10. C — 30
  11. C — 42
  12. D — 7,500 ml
  13. C — 4
  14. C — 70
  15. C — 64
  16. D — £120
  17. C — 45
  18. C — 16
  19. C — 12
  20. C — 24
-

# SECTION 5: UNDERSTAND YOUR SCORE

## **18–20 marks — Excellent problem-solving**

You can handle a range of multi-step questions confidently. Keep practising under timed conditions and explain your reasoning clearly.

## **15–17 marks — Good progress**

You have a strong foundation. Review the questions you missed and practise the problem types that caused difficulty.

## **11–14 marks — Developing confidence**

Focus on breaking word problems into smaller steps. Write down what you know, what you need to find and which calculation should come first.

## **0–10 marks — Build your foundations**

Work through the solutions slowly. Practise one problem type at a time, then return to the full pack when you feel more confident.

## Five Strategies For 11+ Problem-Solving

1. **Read twice.** Make sure you understand what the question is asking before calculating.
2. **Spot the steps.** Identify whether the question needs one calculation or several.
3. **Work backwards when useful.** Reverse the operations to find a starting number.
4. **Keep track of units.** Convert metres, centimetres, litres, millilitres and time units carefully.
5. **Check your answer.** Substitute it back into the problem or estimate whether it makes sense.

## Want More 11+ Practice?

Strong problem-solving develops through regular practice, careful checking and learning from mistakes.

Explore more educational resources and practice materials from **Acumen Teach:**

<https://www.acumen-teach.co.uk/>

**Acumen Teach — helping children practise with purpose and progress with confidence.**

$$3,487 + 2,956 = 6,443$$

Remember to carry digits into the next column when a column total is 10 or more.

### Question 2 — Answer C: 300

Calculate:

$$7,200 \div 24$$

Since  $24 \times 3 = 72$ , it follows that:

$$24 \times 300 = 7,200$$

Therefore:

$$7,200 \div 24 = 300$$

### **Question 3 — Answer C: 45**

To find  $\frac{5}{8}$  of 72:

First divide by 8:

$$72 \div 8 = 9$$

Then multiply by 5:

$$9 \times 5 = 45$$

Answer: 45

### **Question 4 — Answer B: 1.2**

Multiplying by 0.5 is the same as finding half.

Half of 2.4 is 1.2.

Answer: 1.2

### **Question 5 — Answer C: 56**

Find 10% of 160:

$$160 \div 10 = 16$$

Find 30%:

$$16 \times 3 = 48$$

Find 5%:

$$\text{Half of } 10\% = 8$$

Add them together:

$$48 + 8 = 56$$

Answer: 56

### **Question 6 — Answer C: 20**

The ratio is 4:5.

Total parts:

$$4 + 5 = 9$$

Each part represents:

$$36 \div 9 = 4 \text{ children}$$

Girls represent 5 parts:

$$5 \times 4 = 20$$

Answer: 20 girls

### **Question 7 — Answer B: 360 cm**

1 metre = 100 centimetres.

Therefore:

$$3.6 \times 100 = 360$$

Answer: 360 cm

**Question 8 — Answer C: 42 cm**

A rectangle has two lengths and two widths.

$$\text{Perimeter} = 13 + 8 + 13 + 8$$

$$= 42 \text{ cm}$$

Alternatively:

$$\text{Perimeter} = 2 \times (13 + 8)$$

$$= 2 \times 21$$

$$= 42 \text{ cm}$$

**Question 9 — Answer B: 42 cm<sup>2</sup>**

Area of a triangle = base  $\times$  height  $\div$  2

Substitute the values:

$$12 \times 7 \div 2$$

$$= 84 \div 2$$

$$= 42 \text{ cm}^2$$

Remember to divide by 2 when calculating the area of a triangle.

**Question 10 — Answer B: 12**

To find the mean, add the numbers and divide by how many numbers there are.

$$8 + 11 + 14 + 15 = 48$$

There are 4 numbers.

$$48 \div 4 = 12$$

Answer: 12

**Question 11 — Answer D: 78**

Look at how the numbers change:

$$3 \times 2 + 2 = 8$$

$$8 \times 2 + 2 = 18$$

$$18 \times 2 + 2 = 38$$

Apply the same rule again:

$$38 \times 2 + 2 = 78$$

Answer: 78

**Question 12 — Answer B: £7.25**

First find the total cost:

$$£4.25 \times 3 = £12.75$$

Then subtract from £20:

$$£20.00 - £12.75 = £7.25$$

Answer: £7.25

**Question 13 — Answer C: 1 hour 35 minutes**

From 14:35 to 15:35 is 1 hour.

From 15:35 to 16:10 is 35 minutes.

Total time:

$$1 \text{ hour} + 35 \text{ minutes} = 1 \text{ hour } 35 \text{ minutes}$$

**Question 14 — Answer C: 5/6**

The denominators must be the same before adding.

Convert  $\frac{2}{3}$  into sixths:

$$\frac{2}{3} = \frac{4}{6}$$

Now add:

$$\frac{4}{6} + \frac{1}{6} = \frac{5}{6}$$

Answer:  $\frac{5}{6}$

**Question 15 — Answer C: 3/4**

Write 0.75 as a fraction:

$$0.75 = \frac{75}{100}$$

Simplify by dividing the numerator and denominator by 25:

$$75 \div 25 = 3$$

$$100 \div 25 = 4$$

Therefore:

$$0.75 = \frac{3}{4}$$

**Question 16 — Answer C: 24**

The ratio is 2:5.

Total parts:

$$2 + 5 = 7$$

Value of one part:

$$84 \div 7 = 12$$

The smaller share is 2 parts:

$$12 \times 2 = 24$$

Answer: 24 sweets

**Question 17 — Answer A: 81**

First find the total number of pencils:

$$6 \times 18 = 108$$

Then subtract the pencils given away:

$$108 - 27 = 81$$

Answer: 81 pencils

**Question 18 — Answer C:  $\frac{1}{2}$**

First find the total number of counters:

$$3 + 5 + 2 = 10$$

Counters that are not blue:

$$3 \text{ red} + 2 \text{ green} = 5$$

Probability = favourable outcomes  $\div$  total outcomes

$$5/10 = \frac{1}{2}$$

Answer:  $\frac{1}{2}$

**Question 19 — Answer D:  $60 \text{ cm}^3$**

Volume of a cuboid = length  $\times$  width  $\times$  height

$$5 \times 4 \times 3 = 60$$

Answer:  $60 \text{ cm}^3$

Remember that volume is measured in cubic units.

### **Question 20 — Answer C: 59**

If a number divided by 7 gives 8 remainder 3, multiply 8 by 7 and add the remainder.

$$8 \times 7 = 56$$

$$56 + 3 = 59$$

Check:

$$59 \div 7 = 8 \text{ remainder } 3$$

Answer: 59

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## **SECTION 4: ANSWER KEY**

1. B — 6,443
2. C — 300
3. C — 45
4. B — 1.2
5. C — 56
6. C — 20
7. B — 360 cm
8. C — 42 cm
9. B —  $42 \text{ cm}^2$
10. B — 12

- 11. D — 78
  - 12. B — £7.25
  - 13. C — 1 hour 35 minutes
  - 14. C —  $\frac{5}{6}$
  - 15. C —  $\frac{3}{4}$
  - 16. C — 24
  - 17. A — 81
  - 18. C —  $\frac{1}{2}$
  - 19. D —  $60 \text{ cm}^3$
  - 20. C — 59
- 

## SECTION 5: REVIEW YOUR SCORE

**18–20 marks:** Excellent work. Your mixed-topic skills are strong. Focus on maintaining accuracy under timed conditions.

**15–17 marks:** Good progress. Review the questions you missed and practise those topics again.

**11–14 marks:** A solid starting point. Identify your weakest two or three topics and work on them before attempting another timed pack.

**0–10 marks:** Take your time reviewing the worked solutions. Build confidence with each topic before increasing your speed.

## KEY 11+ EXAM TIPS

- Read the full question before calculating.
- Underline important numbers and units.
- For ratio questions, add the ratio parts first.
- For percentage questions, look for useful values such as 10%, 25% and 50%.

- For word problems, work out what the question is asking you to find.
- Check whether your answer is sensible.
- If a question is taking too long, move on and return to it later.

## **WANT TO BUILD EVEN MORE CONFIDENCE?**

Regular, targeted practice can help children improve their accuracy, confidence and problem-solving skills for the 11+.

Explore more learning resources and practice materials from **Acumen Teach**:

<https://www.acumen-teach.co.uk/>

**Acumen Teach — helping children practise with purpose and progress with confidence.**

Correct answer: B — 125

Calculate  $68 + 57$ .

Split 57 into 50 and 7.

$$68 + 50 = 118$$

$$118 + 7 = 125$$

Final answer: 125

Mental maths tip: Add the tens first, then add the remaining units.

### **Question 2 — Mental Subtraction**

Correct answer: C — 114

Calculate  $200 - 86$ .

First subtract 80:

$$200 - 80 = 120$$

Then subtract 6:

$$120 - 6 = 114$$

Final answer: 114

Mental maths tip: Splitting a number into tens and units can make subtraction easier.

### **Question 3 — Times Tables**

Correct answer: D — 84

Calculate  $14 \times 6$ .

Split 14 into 10 and 4.

$$10 \times 6 = 60$$

$$4 \times 6 = 24$$

Add the results:

$$60 + 24 = 84$$

Final answer: 84

Mental maths tip: Break a larger multiplication into two easier calculations.

### **Question 4 — Division Facts**

Correct answer: A — 12

Calculate  $144 \div 12$ .

Think of the related multiplication:

$$12 \times 12 = 144$$

Therefore:

$$144 \div 12 = 12$$

Final answer: 12

Mental maths tip: Knowing your multiplication tables makes division much quicker.

### **Question 5 — Percentages**

Correct answer: B — 24

Find 25% of 96.

25% is the same as one quarter.

Divide 96 by 4:

$$96 \div 4 = 24$$

Final answer: 24

Mental maths tip:

10% means divide by 10.

25% means divide by 4.

50% means divide by 2.

### **Question 6 — Finding 10%**

Correct answer: C — 37

Find 10% of 370.

To find 10%, divide by 10:

$$370 \div 10 = 37$$

Final answer: 37

Mental maths tip: Dividing a number by 10 moves its digits one place to the right relative to the decimal point.

### **Question 7 — Fractions Of Amounts**

Correct answer: A — 39

Find  $\frac{3}{4}$  of 52.

First divide by the denominator:

$$52 \div 4 = 13$$

Then multiply by the numerator:

$$13 \times 3 = 39$$

Final answer: 39

Mental maths tip: Divide first, then multiply when finding a fraction of an amount.

### **Question 8 — Decimal Addition**

Correct answer: D — 6.25

Calculate  $2.5 + 3.75$ .

Rewrite 2.5 as 2.50.

$$2.50 + 3.75 = 6.25$$

Final answer: 6.25

Mental maths tip: You can add decimal numbers more confidently by imagining the decimal places lined up.

### **Question 9 — Decimal Subtraction**

Correct answer: B — 5.75

Calculate  $8.4 - 2.65$ .

Rewrite 8.4 as 8.40.

$$8.40 - 2.65 = 5.75$$

Final answer: 5.75

Mental maths tip: You can also count upwards from 2.65 to 8.40, but lining up the decimal places is a reliable way to check the result.

### **Question 10 — Multiplying Decimals**

Correct answer: C — 42

Calculate  $0.6 \times 70$ .

First calculate:

$$6 \times 70 = 420$$

Since 0.6 is one tenth of 6, the answer must be one tenth of 420.

$$420 \div 10 = 42$$

Final answer: 42

Mental maths tip: Use a related whole-number calculation, then adjust the answer to account for the decimal.

### **Question 11 — Multiplication Strategies**

Correct answer: A — 180

Calculate  $15 \times 12$ .

Split 12 into 10 and 2.

$$15 \times 10 = 150$$

$$15 \times 2 = 30$$

Add the results:

$$150 + 30 = 180$$

Final answer: 180

Mental maths tip: Multiplying by 12 is often easier when you multiply by 10 and then add twice the original number.

### **Question 12 — Multiplying By 99**

Correct answer: D — 693

Calculate  $99 \times 7$ .

Think of 99 as  $100 - 1$ .

$$100 \times 7 = 700$$

Subtract one group of 7:

$$700 - 7 = 693$$

Final answer: 693

Mental maths tip: Multiply by 100 and subtract one copy of the number.

### **Question 13 — Division**

Correct answer: B — 45

Calculate  $360 \div 8$ .

Think of 360 as 36 tens.

$$36 \div 8 = 4.5$$

Therefore:

$$360 \div 8 = 45$$

You can also check using multiplication:

$$45 \times 8 = 360$$

Final answer: 45

Mental maths tip: Use known multiplication facts to check your division.

### Question 14 — Fractions Of Amounts

Correct answer: C — 27

Find  $\frac{1}{5}$  of 135.

Divide by the denominator:

$$135 \div 5 = 27$$

Final answer: 27

Mental maths tip: To find one fifth of a number, divide it by 5.

### Question 15 — Percentage Calculation

Correct answer: A — 70

Find 35% of 200.

First find 10%:

$$200 \div 10 = 20$$

So 30% is:

$$20 \times 3 = 60$$

Next find 5%, which is half of 10%:

$$20 \div 2 = 10$$

Add the two percentages:

$$60 + 10 = 70$$

Final answer: 70

Mental maths tip: Break less familiar percentages into smaller percentages that are easier to calculate.

### **Question 16 — Dividing Decimals**

Correct answer: D — 8

Calculate  $4.8 \div 0.6$ .

Multiply both numbers by 10 to remove the decimals:

$$4.8 \div 0.6 = 48 \div 6$$

Now calculate:

$$48 \div 6 = 8$$

Final answer: 8

Mental maths tip: Multiplying both numbers by the same amount keeps the division answer unchanged and can make the calculation simpler.

### **Question 17 — Metric Conversions**

Correct answer: B — 240 cm

Convert 2.4 metres into centimetres.

There are 100 centimetres in 1 metre.

Therefore:

$$2.4 \times 100 = 240$$

Final answer: 240 cm

Mental maths tip: Converting metres to centimetres means multiplying by 100.

### **Question 18 — Time Calculation**

Correct answer: C — 45 minutes

The lesson begins at 10:35 am and finishes at 11:20 am.

From 10:35 am to 11:00 am is 25 minutes.

From 11:00 am to 11:20 am is 20 minutes.

Add the intervals:

$$25 + 20 = 45 \text{ minutes}$$

Final answer: 45 minutes

Mental maths tip: Count to the next hour first, then add the remaining minutes.

### **Question 19 — Money**

Correct answer: A — £1.40

Three pens cost £1.20 each.

First calculate the total cost:

$$£1.20 \times 3 = £3.60$$

Subtract this from £5.00:

$$£5.00 - £3.60 = £1.40$$

Final answer: £1.40

Mental maths tip: Calculate the total cost before finding the change.

## Question 20 — Mixed Operations

Correct answer: C — 29

Calculate:

$$48 \div 6 + 7 \times 3$$

Complete division and multiplication before addition.

First:

$$48 \div 6 = 8$$

Next:

$$7 \times 3 = 21$$

Finally:

$$8 + 21 = 29$$

Final answer: 29

Mental maths tip: Multiplication and division must be completed before addition and subtraction.

## SECTION 4 — QUICK ANSWER KEY

1. B — 125
2. C — 114
3. D — 84
4. A — 12
5. B — 24
6. C — 37
7. A — 39
8. D — 6.25
9. B — 5.75

- 10. C — 42
- 11. A — 180
- 12. D — 693
- 13. B — 45
- 14. C — 27
- 15. A — 70
- 16. D — 8
- 17. B — 240 cm
- 18. C — 45 minutes
- 19. A — £1.40
- 20. C — 29

### **Make Your Next Practice Session Count**

Mental maths improves through regular practice. Encourage your child to revisit any questions they found difficult and try the same calculation again using a different mental strategy.

Rather than focusing only on speed, aim to build a combination of accuracy, confidence and efficient methods.

### **WANT TO DEVELOP YOUR SKILLS FURTHER?**

At Acumen Teach, our additional 11+ revision guides and practice resources can help pupils strengthen individual maths topics, develop problem-solving strategies and prepare for a wider range of exam-style questions.