

# 11+ Maths Practice Paper

## Year 6 · Advanced

### Lesson 2.1: Column addition and subtraction puzzles

#### Read this with your child:

1. This paper has **27 questions** in two parts. Work through them in order. The questions get harder as you go.
2. **Part 1** is multiple choice. Choose **one** answer, A, B, C, D or E, and mark it on the separate answer sheet by drawing a firm line through the box next to its letter. If you change your mind, rub the line out completely and mark your new answer.
3. **Part 2** asks you to write your answer. Write it in the boxes on the answer sheet, **one digit in each box**, starting from the left.
4. If a question is hard, leave it and come back to it at the end.
5. You may use rough paper for working out. You may **not** use a calculator.
6. Suggested time: **35 minutes**.

The answer sheet is after the questions. The answers, with a short explanation of each, are at the back for a parent to mark with.

*These are original practice questions written by Elite Learners in the style of 11+ entrance tests. They are not produced by, or connected with, GL Assessment or Cambridge University Press & Assessment (CEM).*

## Example

Work out this addition.

$$\begin{array}{r} 36475 \\ + 28368 \\ \hline \\ \hline \end{array}$$

A 54,733

B 64,743

C 8,107

D 64,843

E 64,833

**Answer: D** Ones:  $5 + 8 = 13$ , carry 1. Tens:  $7 + 6 + 1 = 14$ , carry 1. Hundreds:  $4 + 3 + 1 = 8$ . Thousands:  $6 + 8 = 14$ , carry 1. Ten thousands:  $3 + 2 + 1 = 6$ . So 64,843.

*The answer, D, has already been marked on your answer sheet.*

**Now turn over and start Part 1.**

## Part 1: Multiple choice

1

Work out this addition.

$$\begin{array}{r} 47263 \\ + 31528 \\ \hline \end{array}$$

- A** 78,781      **B** 77,791      **C** 78,791      **D** 15,735      **E** 78,891

2

Work out this subtraction.

$$\begin{array}{r} 86594 \\ - 42371 \\ \hline \end{array}$$

- A** 44,223      **B** 44,233      **C** 128,965      **D** 44,323      **E** 43,223

3

Work out this addition.

$$\begin{array}{r} 58476 \\ + 27958 \\ \hline \end{array}$$

- A** 75,324      **B** 86,334      **C** 85,434      **D** 30,518      **E** 86,434

4

Work out this subtraction.

$$\begin{array}{r} 70000 \\ - 26384 \\ \hline \end{array}$$

- A 56,384      B 43,616      C 54,726      D 44,726      E 96,384

5

$$53,126 - 18,457 = 34,669$$

Which of these is also true?

- A  $53,126 + 18,457 = 34,669$   
 B  $18,457 - 34,669 = 53,126$   
 C  $34,669 - 18,457 = 53,126$   
 D  $34,669 + 18,457 = 53,126$   
 E  $53,126 + 34,669 = 18,457$

6

What is the missing number?  $? + 24,867 = 61,302$ 

- A 36,435      B 86,169      C 47,545      D 36,535      E 37,435

7

Work out this addition.

$$\begin{array}{r} 4786 \\ 3958 \\ + 2679 \\ \hline \end{array}$$

- A 11,413      B 9,203      C 11,423      D 10,423      E 11,323

8

What is the missing digit?

$$\begin{array}{r}
 7 \boxed{?} 4 1 5 \\
 - 3 8 2 6 7 \\
 \hline
 3 8 1 4 8
 \end{array}$$

A 5

B 7

C 8

D 4

E 6

9

Work out this subtraction.

$$\begin{array}{r}
 4 0 0 0 0 5 \\
 - 1 2 3 4 5 6 \\
 \hline
 \\
 \hline
 \end{array}$$

A 323,451

B 387,659

C 287,659

D 276,549

E 523,461

10

What is the missing number?  $82,000 - ? = 37,465$ 

A 119,465

B 44,535

C 55,645

D 45,535

E 44,545

11

What are the missing digits, from left to right?

$$\begin{array}{r}
 4 \boxed{?} 6 \boxed{?} 8 \\
 + 2 7 3 5 4 \\
 \hline
 7 4 0 3 2
 \end{array}$$

A 7 and 6

B 6 and 6

C 5 and 7

D 6 and 8

E 6 and 7

12

Use each of the digits 1, 2, 3, 4, 5 and 6 once to make two 3-digit numbers.

What is the largest total you can make?

A 975

B 1,155

C 1,163

D 1,173

E 1,107

13

What number is 18,975 more than 26,348?

A 45,323

B 7,373

C 34,213

D 45,223

E 44,323

14

What is the missing digit?

$$\begin{array}{r}
 6 \boxed{?} 2 0 4 \\
 - 2 5 8 6 7 \\
 \hline
 3 7 3 3 7
 \end{array}$$

A 2

B 4

C 3

D 7

E 9

15

Which of these calculations has the answer 25,000?

A  $51,000 - 24,000$ B  $63,410 - 38,410$ C  $12,500 + 12,050$ D  $40,000 - 15,500$ E  $17,350 + 8,560$ 

16

What is the bottom number?

$$\begin{array}{r}
 3 \boxed{?} 8 \\
 + \boxed{?} 5 \boxed{?} \\
 \hline
 1 0 0 0
 \end{array}$$

A 552

B 653

C 752

D 651

E 652

17

Over two days, 38,465 people visited a show. 19,887 of them came on the first day.

How many people came on the second day?

A 58,352

B 21,422

C 29,688

D 18,578

E 18,678

18

Use each of the digits 2, 4, 7 and 9 once to make two 2-digit numbers.

What is the largest difference you can make?

A 67

B 73

C 75

D 45

E 72

19

What are the missing digits, from left to right?

$$\begin{array}{r} 8 \boxed{?} 5 2 \boxed{?} \\ - 3 4 7 6 8 \\ \hline 4 7 7 5 5 \end{array}$$

A 2 and 3

B 3 and 2

C 2 and 7

D 1 and 3

E 3 and 3

20

What must be added to 45,678 to make 100,000?

A 55,322

B 54,422

C 54,322

D 65,432

E 145,678

## Part 2: Write your answer

21

Work out this addition.

$$\begin{array}{r} 6 8 4 5 7 \\ + 2 5 7 8 6 \\ \hline \end{array}$$

Write your answer in the boxes on the answer sheet, one digit in each box.

22

Work out this subtraction.

$$\begin{array}{r} 9 0 3 0 4 \\ - 4 7 5 6 8 \\ \hline \end{array}$$

Write your answer in the boxes on the answer sheet, one digit in each box.

23

Work out this addition.

$$\begin{array}{r}
 13475 \\
 8906 \\
 + 27839 \\
 \hline
 \\
 \hline
 \end{array}$$

Write your answer in the boxes on the answer sheet, one digit in each box.

24

What is the missing number?  $? - 36,798 = 47,856$ 

Write your answer in the boxes on the answer sheet, one digit in each box.

25

Work out this subtraction.

$$\begin{array}{r}
 200000 \\
 - 86573 \\
 \hline
 \\
 \hline
 \end{array}$$

Write your answer in the boxes on the answer sheet, one digit in each box.

26

What is the missing digit?

$$\begin{array}{r}
 3 \boxed{?} 846 \\
 + 45967 \\
 \hline
 81813 \\
 \hline
 \end{array}$$

Write your answer in the boxes on the answer sheet, one digit in each box.

27

What is the missing number?  $? + 23,486 + 31,759 = 75,000$ 

Write your answer in the boxes on the answer sheet, one digit in each box.

# Answer sheet

11+ Maths Practice Paper · Year 6 · Lesson 2.1: Column addition and subtraction puzzles

Name .....

Draw a firm line through the box next to your answer, like the example.

## Part 1: Multiple choice

|           |                            |                            |                            |                                       |                            |
|-----------|----------------------------|----------------------------|----------------------------|---------------------------------------|----------------------------|
| <b>Ex</b> | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input checked="" type="checkbox"/> | E <input type="checkbox"/> |
| <b>1</b>  | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>2</b>  | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>3</b>  | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>4</b>  | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>5</b>  | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>6</b>  | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>7</b>  | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>8</b>  | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>9</b>  | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>10</b> | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>11</b> | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>12</b> | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>13</b> | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>14</b> | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>15</b> | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>16</b> | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>17</b> | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>18</b> | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>19</b> | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |
| <b>20</b> | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> | D <input type="checkbox"/>            | E <input type="checkbox"/> |

## Part 2: Write your answer, one digit in each box

|           |                      |                      |                      |                      |                      |                      |
|-----------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <b>21</b> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |                      |
| <b>22</b> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |                      |
| <b>23</b> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |                      |
| <b>24</b> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |                      |
| <b>25</b> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <b>26</b> | <input type="text"/> |                      |                      |                      |                      |                      |
| <b>27</b> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |                      |

# Answers

For a parent to mark with. One mark for each question: the paper is out of 27. Talk through any your child got wrong, using the explanation.

| Q  | Answer                       | How to get it                                                                                                                                                                                                                                 |
|----|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | C 78,791                     | Ones: $3 + 8 = 11$ , carry 1. Tens: $6 + 2 + 1 = 9$ . Hundreds: $2 + 5 = 7$ . Thousands: $7 + 1 = 8$ . Ten thousands: $4 + 3 = 7$ . So 78,791.                                                                                                |
| 2  | A 44,223                     | No exchanges. Ones: $4 - 1 = 3$ . Tens: $9 - 7 = 2$ . Hundreds: $5 - 3 = 2$ . Thousands: $6 - 2 = 4$ . Ten thousands: $8 - 4 = 4$ . So 44,223.                                                                                                |
| 3  | E 86,434                     | Ones: $6 + 8 = 14$ , carry 1. Tens: $7 + 5 + 1 = 13$ , carry 1. Hundreds: $4 + 9 + 1 = 14$ , carry 1. Thousands: $8 + 7 + 1 = 16$ , carry 1. Ten thousands: $5 + 2 + 1 = 8$ . So 86,434.                                                      |
| 4  | B 43,616                     | Exchange across all four zeros: 7 becomes 6, each zero becomes 9, the ones become 10. $10 - 4 = 6$ , $9 - 8 = 1$ , $9 - 3 = 6$ , $9 - 6 = 3$ , $6 - 2 = 4$ . So 43,616.                                                                       |
| 5  | D $34,669 + 18,457 = 53,126$ | Addition undoes subtraction. The answer plus the number taken away gives the starting number: $34,669 + 18,457 = 53,126$ .                                                                                                                    |
| 6  | A 36,435                     | Undo the adding: $61,302 - 24,867 = 36,435$ . Check: $36,435 + 24,867 = 61,302$ .                                                                                                                                                             |
| 7  | C 11,423                     | Ones: $6 + 8 + 9 = 23$ . Write 3, carry 2. Tens: $8 + 5 + 7 + 2 = 22$ , carry 2. Hundreds: $7 + 9 + 6 + 2 = 24$ , carry 2. Thousands: $4 + 3 + 2 + 2 = 11$ . So 11,423.                                                                       |
| 8  | E 6                          | Use the inverse: $38,148 + 38,267 = 76,415$ . So the missing digit is 6.                                                                                                                                                                      |
| 9  | D 276,549                    | Exchange across all four zeros: 4 becomes 3, each zero becomes 9, the ones become 15. $15 - 6 = 9$ , $9 - 5 = 4$ , $9 - 4 = 5$ , $9 - 3 = 6$ , $9 - 2 = 7$ , $3 - 1 = 2$ . So 276,549.                                                        |
| 10 | B 44,535                     | The ? is the amount taken away, so it is $82,000 - 37,465 = 44,535$ . Check: $82,000 - 44,535 = 37,465$ .                                                                                                                                     |
| 11 | E 6 and 7                    | Ones: $8 + 4 = 12$ , carry 1. Tens: ? + 5 + 1 must end in 3, so ? = 7, carry 1. Hundreds: $6 + 3 + 1 = 10$ , carry 1. Thousands: ? + 7 + 1 must end in 4, so ? = 6, carry 1. Ten thousands: $4 + 2 + 1 = 7$ . So $46,678 + 27,354 = 74,032$ . |
| 12 | D 1,173                      | Put the biggest digits in the hundreds (6 and 5), then the tens (4 and 3), then the ones (2 and 1). For example, $642 + 531 = 1,173$ .                                                                                                        |
| 13 | A 45,323                     | Add: $26,348 + 18,975$ . Ones: $8 + 5 = 13$ , carry 1. Tens: $4 + 7 + 1 = 12$ , carry 1. Hundreds: $3 + 9 + 1 = 13$ , carry 1. Thousands: $6 + 8 + 1 = 15$ , carry 1. Ten thousands: $2 + 1 + 1 = 4$ . So 45,323.                             |
| 14 | C 3                          | Use the inverse: $37,337 + 25,867 = 63,204$ . So the missing digit is 3.                                                                                                                                                                      |
| 15 | B $63,410 - 38,410$          | $63,410 - 38,410 = 25,000$ . The others make 27,000, 24,550, 24,500 and 25,910.                                                                                                                                                               |
| 16 | E 652                        | Ones: $8 + ?$ must make 10, so ? = 2, carry 1. Tens: ? + 5 + 1 must make 10, so the top digit is 4, carry 1. Hundreds: $3 + ? + 1$ must make 10, so ? = 6. So the bottom number is 652: $348 + 652 = 1,000$ .                                 |
| 17 | D 18,578                     | $19,887 + ? = 38,465$ , so ? = $38,465 - 19,887 = 18,578$ . Check: $18,578 + 19,887 = 38,465$ .                                                                                                                                               |

| Q  | Answer    | How to get it                                                                                                                                                                                                                          |
|----|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18 | B 73      | Make the bigger number as big as possible (97) and the smaller number as small as possible (24). $97 - 24 = 73$ .                                                                                                                      |
| 19 | A 2 and 3 | Use the inverse: $47,755 + 34,768 = 82,523$ . So the missing digits are 2 and 3.                                                                                                                                                       |
| 20 | C 54,322  | $45,678 + ? = 100,000$ , so $? = 100,000 - 45,678 = 54,322$ . Check: $54,322 + 45,678 = 100,000$ .                                                                                                                                     |
| 21 | 94,243    | Ones: $7 + 6 = 13$ , carry 1. Tens: $5 + 8 + 1 = 14$ , carry 1. Hundreds: $4 + 7 + 1 = 12$ , carry 1. Thousands: $8 + 5 + 1 = 14$ , carry 1. Ten thousands: $6 + 2 + 1 = 9$ . So 94,243.                                               |
| 22 | 42,736    | Ones: $4 - 8$ , and the tens are 0, so exchange from the hundreds: $14 - 8 = 6$ , $9 - 6 = 3$ . Hundreds: $2 - 5$ , and the thousands are 0, so exchange from the ten thousands: $12 - 5 = 7$ , $9 - 7 = 2$ , $8 - 4 = 4$ . So 42,736. |
| 23 | 50,220    | Ones: $5 + 6 + 9 = 20$ , carry 2. Tens: $7 + 0 + 3 + 2 = 12$ , carry 1. Hundreds: $4 + 9 + 8 + 1 = 22$ , carry 2. Thousands: $3 + 8 + 7 + 2 = 20$ , carry 2. Ten thousands: $1 + 2 + 2 = 5$ . So 50,220.                               |
| 24 | 84,654    | Undo the taking away: $47,856 + 36,798 = 84,654$ . Check: $84,654 - 36,798 = 47,856$ .                                                                                                                                                 |
| 25 | 113,427   | Exchange across all the zeros: 2 becomes 1, each zero becomes 9, the ones become 10. $10 - 3 = 7$ , $9 - 7 = 2$ , $9 - 5 = 4$ , $9 - 6 = 3$ , $9 - 8 = 1$ , $1 - 0 = 1$ . So 113,427.                                                  |
| 26 | 5         | Ones: $6 + 7 = 13$ , carry 1. Tens: $4 + 6 + 1 = 11$ , carry 1. Hundreds: $8 + 9 + 1 = 18$ , carry 1. Thousands: $? + 5 + 1$ must end in 1, so $? = 5$ , carry 1. Ten thousands: $3 + 4 + 1 = 8$ . So $35,846 + 45,967 = 81,813$ .     |
| 27 | 19,755    | The two numbers you know make $23,486 + 31,759 = 55,245$ . Then $? = 75,000 - 55,245 = 19,755$ . Check: $19,755 + 55,245 = 75,000$ .                                                                                                   |

Score: ..... out of 27