

# 11+ Maths Practice Paper

## Year 5 · Intermediate

### Lesson 1.7: Special number families

#### Read this with your child:

1. This paper has **24 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: **30 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

Which of these is  $5^2$ ?

A 10

B 25

C 52

D 7

E 55

**Answer: B**  $5^2 = 5 \times 5 = 25$ .

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

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

## Part 1: Multiple choice

1

What is  $11^2$ ?

A 22

B 111

C 121

D 112

E 101

2

What is the square root of 64?

A 8

B 32

C 4

D 16

E 6

3

What is  $4^3$ ?

A 12

B 16

C 43

D 64

E 48

4

Which of these is a square number?

A 40

B 50

C 64

D 60

E 80

5

Which of these is **not** a cube number?

A 1

B 8

C 36

D 27

E 64

6

What is  $12^2$ ?

A 24

B 124

C 122

D 132

E 144

7

What is the cube root of 125?

A 5

B 25

C 15

D 3

E 12

8

What is the square root of 121?

A 12

B 60

C 11

D 21

E 10

9

What is  $6^2 + 8^2$ ?

- A 28                      B 196                      C 48                      D 14                      E 100
- 

10

The square root of 45 is between which two whole numbers?

- A 5 and 6                      B 7 and 8                      C 22 and 23                      D 4 and 5                      E 6 and 7
- 

11

Which of these is both a square number and a cube number?

- A 16                      B 64                      C 27                      D 81                      E 100
- 

12

A square patio is made of 144 tiles.

How many tiles are along each side?

- A 12                      B 14                      C 72                      D 36                      E 24
- 

13

What is  $5^3$ ?

- A 15                      B 125                      C 25                      D 53                      E 75
- 

14

What is  $7^2 - 5^2$ ?

- A 4                      B 24                      C 2                      D 14                      E 74
- 

15

Which of these is a square number between 70 and 90?

- A 72                      B 75                      C 84                      D 81                      E 89
- 

16

How many square numbers are greater than 10 and less than 100?

- A 6                      B 5                      C 7                      D 8                      E 9
-

17

Mia thinks of a number. She squares it and gets 169.

**What number did Mia think of?**

A 12

B 13

C 14

D 17

E 84

18

A big cube is built from small cubes. It is 3 small cubes long, 3 wide and 3 high.

**How many small cubes are there?**

A 9

B 18

C 12

D 27

E 6

## Part 2: Write your answer

19

**What is  $9^2 - 8^2$ ?**

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

20

**What is the cube root of 27?**

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

21

**What is  $2^3 + 3^3$ ?**

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

22

A square of tiles has 14 tiles along each side.

**How many tiles are there altogether?**

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

23

**What is the smallest square number bigger than 150?**

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

24

Jo has 60 counters. She makes the biggest square she can with them.

**How many counters are left over?**

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

# Answer sheet

11+ Maths Practice Paper · Year 5 · Lesson 1.7: Special number families

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 checked="" type="checkbox"/> | C <input type="checkbox"/> | D <input 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"/> |

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

|           |                                           |           |                                                                |
|-----------|-------------------------------------------|-----------|----------------------------------------------------------------|
| <b>19</b> | <input type="text"/> <input type="text"/> | <b>22</b> | <input type="text"/> <input type="text"/> <input type="text"/> |
| <b>20</b> | <input type="text"/>                      | <b>23</b> | <input type="text"/> <input type="text"/> <input type="text"/> |
| <b>21</b> | <input type="text"/> <input type="text"/> | <b>24</b> | <input type="text"/> <input type="text"/>                      |

# Answers

For a parent to mark with. One mark for each question: the paper is out of 24. Talk through any your child got wrong, using the explanation.

| Q  | Answer    | How to get it                                                                                             |
|----|-----------|-----------------------------------------------------------------------------------------------------------|
| 1  | C 121     | $11^2 = 11 \times 11 = 121$ .                                                                             |
| 2  | A 8       | $8 \times 8 = 64$ . (4 is the cube root of 64.)                                                           |
| 3  | D 64      | $4 \times 4 = 16$ , then $16 \times 4 = 64$ .                                                             |
| 4  | C 64      | $64 = 8 \times 8$ .                                                                                       |
| 5  | C 36      | 1, 8, 27 and 64 are $1^3$ , $2^3$ , $3^3$ and $4^3$ . 36 is a square number ( $6^2$ ), not a cube number. |
| 6  | E 144     | $12^2 = 12 \times 12 = 144$ .                                                                             |
| 7  | A 5       | $5 \times 5 \times 5 = 125$ .                                                                             |
| 8  | C 11      | $11 \times 11 = 121$ .                                                                                    |
| 9  | E 100     | $36 + 64 = 100$ .                                                                                         |
| 10 | E 6 and 7 | $6^2 = 36$ and $7^2 = 49$ . 45 is between them.                                                           |
| 11 | B 64      | $64 = 8^2$ and $64 = 4^3$ .                                                                               |
| 12 | A 12      | $12 \times 12 = 144$ .                                                                                    |
| 13 | B 125     | $5 \times 5 = 25$ , then $25 \times 5 = 125$ .                                                            |
| 14 | B 24      | $49 - 25 = 24$ .                                                                                          |
| 15 | D 81      | $81 = 9^2$ .                                                                                              |
| 16 | A 6       | 16, 25, 36, 49, 64 and 81: that makes 6.                                                                  |
| 17 | B 13      | $13 \times 13 = 169$ .                                                                                    |
| 18 | D 27      | $3^3 = 3 \times 3 \times 3 = 27$ .                                                                        |
| 19 | 17        | $81 - 64 = 17$ .                                                                                          |
| 20 | 3         | $3 \times 3 \times 3 = 27$ .                                                                              |
| 21 | 35        | $8 + 27 = 35$ .                                                                                           |
| 22 | 196       | $14 \times 14 = 196$ .                                                                                    |
| 23 | 169       | $12^2 = 144$ is too small. $13^2 = 169$ .                                                                 |
| 24 | 11        | The biggest square is $7^2 = 49$ . $60 - 49 = 11$ left over.                                              |

Score: ..... out of 24