

# 11+ Maths Practice Paper

## Year 5 · Intermediate

### Lesson 1.4: Number line dynamics and negative numbers

#### 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

A number line goes from 200 to 300 in 4 equal gaps.

**What number is 3 marks after 200?**

**A** 250

**B** 230

**C** 275

**D** 203

**E** 300

**Answer: C** Each gap is worth  $100 \div 4 = 25$ . 225, 250, 275.

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

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

## Part 1: Multiple choice

1

It is  $-2^{\circ}\text{C}$ . It gets 6 degrees colder. What is it now?

- A  $-6^{\circ}\text{C}$       B  $4^{\circ}\text{C}$       C  $-4^{\circ}\text{C}$       D  $8^{\circ}\text{C}$       E  $-8^{\circ}\text{C}$
- 

2

Which temperature is the warmest?

- A  $-7^{\circ}\text{C}$       B  $-1^{\circ}\text{C}$       C  $-12^{\circ}\text{C}$       D  $-3^{\circ}\text{C}$       E  $-10^{\circ}\text{C}$
- 

3

A number line goes from 0 to 1,000 in 5 equal gaps.

What is each gap worth?

- A 500      B 250      C 100      D 200      E 5
- 

4

What is the difference between  $-6^{\circ}\text{C}$  and  $5^{\circ}\text{C}$ ?

- A 11 degrees      B 1 degree      C  $-1$  degree      D 30 degrees      E 10 degrees
- 

5

Which number is halfway between 16 and 30?

- A 7      B 14      C 23      D 22      E 46
- 

6

A number line goes from 2 to 3 in 5 equal gaps.

What is each gap worth?

- A 5      B 0.5      C 0.1      D 0.2      E 1
-

7

These are temperatures in °C.

**Which list is in order, coldest first?**

- A  $-9 \cdot -4 \cdot 0 \cdot 2$
- B  $-4 \cdot -9 \cdot 0 \cdot 2$
- C  $0 \cdot -4 \cdot -9 \cdot 2$
- D  $2 \cdot 0 \cdot -4 \cdot -9$
- E  $-9 \cdot -4 \cdot 2 \cdot 0$

8

**It is 4 °C. The temperature falls by 9 degrees. What is it now?**

- A  $-13\text{ °C}$
- B  $5\text{ °C}$
- C  $-5\text{ °C}$
- D  $13\text{ °C}$
- E  $-4\text{ °C}$

9

A number line goes from 300 to 400 in 5 equal gaps.

**What number is 4 marks after 300?**

- A 360
- B 340
- C 304
- D 375
- E 380

10

In Oslo it is  $-7\text{ °C}$ . In London it is  $6\text{ °C}$ .

**How much colder is Oslo than London?**

- A 1 degree
- B 13 degrees
- C 7 degrees
- D 6 degrees
- E 12 degrees

11

**Which number is halfway between  $-4$  and  $10$ ?**

- A 7
- B 3
- C 14
- D 6
- E  $-3$

12

**Which of these is true?**

- A  $-6 > -4$
- B  $-3 < -8$
- C  $-1 < -5$
- D  $0 < -2$
- E  $-8 < -3$

13

Count back in 3s: 7, 4, 1, ...

**What are the next two numbers?**

- A 2 and 5
- B  $-1$  and  $-4$
- C  $-2$  and  $-4$
- D  $-2$  and  $-5$
- E  $-3$  and  $-6$

---

14

A thermometer shows  $-3^{\circ}\text{C}$ . The temperature rises by 4 degrees, then falls by 6 degrees.

**What does it show now?**

- A**  $-5^{\circ}\text{C}$       **B**  $5^{\circ}\text{C}$       **C**  $-1^{\circ}\text{C}$       **D**  $7^{\circ}\text{C}$       **E**  $-13^{\circ}\text{C}$
- 

15

A number line goes from 0 to 2 in 8 equal gaps.

**What is each gap worth?**

- A** 0.5      **B** 0.2      **C** 0.25      **D** 4      **E** 0.8
- 

16

**Which number is halfway between 2.4 and 3?**

- A** 2.7      **B** 0.6      **C** 0.3      **D** 2.6      **E** 5.4
- 

17

**What is the difference between  $-12^{\circ}\text{C}$  and  $-3^{\circ}\text{C}$ ?**

- A** 12 degrees    **B** 15 degrees    **C**  $-9$  degrees    **D** 3 degrees    **E** 9 degrees
- 

18

At midnight it was  $-5^{\circ}\text{C}$ . By noon it had risen by 12 degrees.

**What was the temperature at noon?**

- A**  $-7^{\circ}\text{C}$       **B**  $7^{\circ}\text{C}$       **C**  $17^{\circ}\text{C}$       **D**  $-17^{\circ}\text{C}$       **E**  $12^{\circ}\text{C}$
-

## Part 2: Write your answer

19

A number line goes from 0 to 500 in 4 equal gaps.

**What is each gap worth?**

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

20

**Which number is halfway between 35 and 75?**

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

21

**What is the difference between  $-8^{\circ}\text{C}$  and  $6^{\circ}\text{C}$ , in degrees?**

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

22

It is  $-9^{\circ}\text{C}$ . It rises by 15 degrees.

**What is the temperature now, in  $^{\circ}\text{C}$ ?**

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

23

A number line goes from 600 to 700 in 4 equal gaps.

**What number is 3 marks after 600?**

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

24

**Which number is halfway between  $-6$  and  $20$ ?**

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

# Answer sheet

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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 checked="" 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"/> | <input type="text"/> |
| <b>20</b> | <input type="text"/> | <input type="text"/> |                      |
| <b>21</b> | <input type="text"/> | <input type="text"/> |                      |
| <b>22</b> | <input type="text"/> |                      |                      |
| <b>23</b> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <b>24</b> | <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  | E $-8^{\circ}\text{C}$          | Already below zero: $2 + 6 = 8$ below zero, $-8^{\circ}\text{C}$ .                                                          |
| 2  | B $-1^{\circ}\text{C}$          | $-1^{\circ}\text{C}$ is the closest to zero, so it is the warmest.                                                          |
| 3  | D 200                           | $1,000 \div 5 = 200$ .                                                                                                      |
| 4  | A 11 degrees                    | From $-6^{\circ}\text{C}$ to $0^{\circ}\text{C}$ is 6. From $0^{\circ}\text{C}$ to $5^{\circ}\text{C}$ is 5. $6 + 5 = 11$ . |
| 5  | C 23                            | The gap is 14. Half of it is 7. $16 + 7 = 23$ .                                                                             |
| 6  | D 0.2                           | The difference is 1. $1 \div 5 = 0.2$ .                                                                                     |
| 7  | A $-9 \cdot -4 \cdot 0 \cdot 2$ | $-9$ is furthest below zero, then $-4$ , then 0, then 2.                                                                    |
| 8  | C $-5^{\circ}\text{C}$          | Down 4 to $0^{\circ}\text{C}$ . That leaves 5 more: $-5^{\circ}\text{C}$ .                                                  |
| 9  | E 380                           | Each gap is worth 20. 320, 340, 360, 380.                                                                                   |
| 10 | B 13 degrees                    | From $-7^{\circ}\text{C}$ to $0^{\circ}\text{C}$ is 7. From $0^{\circ}\text{C}$ to $6^{\circ}\text{C}$ is 6. $7 + 6 = 13$ . |
| 11 | B 3                             | The gap is 14. Half of it is 7. $-4 + 7 = 3$ .                                                                              |
| 12 | E $-8 < -3$                     | $-8$ is further left than $-3$ , so it is smaller.                                                                          |
| 13 | D $-2$ and $-5$                 | $1 - 3 = -2$ , and $-2 - 3 = -5$ .                                                                                          |
| 14 | A $-5^{\circ}\text{C}$          | $-3 + 4 = 1$ . Then $1 - 6 = -5$ .                                                                                          |
| 15 | C 0.25                          | $2 \div 8 = 0.25$ .                                                                                                         |
| 16 | A 2.7                           | The gap is 0.6. Half of it is 0.3. $2.4 + 0.3 = 2.7$ .                                                                      |
| 17 | E 9 degrees                     | Both are below zero. Count up from $-12$ to $-3$ : 9 degrees.                                                               |
| 18 | B $7^{\circ}\text{C}$           | Up 5 to $0^{\circ}\text{C}$ . That leaves 7 more: $7^{\circ}\text{C}$ .                                                     |
| 19 | 125                             | $500 \div 4 = 125$ .                                                                                                        |
| 20 | 55                              | The gap is 40. Half of it is 20. $35 + 20 = 55$ .                                                                           |
| 21 | 14                              | 8 up to $0^{\circ}\text{C}$ , then 6 more: 14.                                                                              |
| 22 | 6                               | Up 9 to $0^{\circ}\text{C}$ . That leaves 6 more: $6^{\circ}\text{C}$ .                                                     |
| 23 | 675                             | Each gap is worth 25. 625, 650, 675.                                                                                        |
| 24 | 7                               | The gap is 26. Half of it is 13. $-6 + 13 = 7$ .                                                                            |

Score: ..... out of 24