

11+ Maths Practice Paper

Year 6 · Advanced

Lesson 1.4: Number line dynamics and negative numbers

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

Which number is halfway between -8 and 14 ?

A -3

B 11

C 22

D 6

E 3

Answer: E The gap is 22 . Half of it is 11 . $-8 + 11 = 3$.

The answer, E, has already been marked on your answer sheet.

Now turn over and start Part 1.

Part 1: Multiple choice

1

What is the difference between -15°C and 9°C ?

- A -6 degrees B 6 degrees C 24 degrees D 23 degrees E 25 degrees

2

A number line goes from 0 to 1 in 4 equal gaps.

What is the value of the 3rd mark after 0?

- A 0.75 B 0.3 C 0.25 D 0.5 E 3

3

After rising 8 degrees, the temperature is 3°C .

What was it before?

- A -8°C B 11°C C 5°C D -11°C E -5°C

4

Which number is halfway between -7 and 3 ?

- A 2 B -2 C -5 D 5 E -4

5

It is 6°C . It falls by 15 degrees. What is it now?

- A 21°C B 9°C C -21°C D -9°C E -8°C

6

Which number is halfway between 1.6 and 2.4?

- A 2.2 B 1.8 C 0.8 D 2 E 4

7

These are temperatures in °C.

Which list is in order, coldest first?

- A $-3 \cdot -8 \cdot -12 \cdot 0 \cdot 5$
- B $-12 \cdot -8 \cdot -3 \cdot 0 \cdot 5$
- C $0 \cdot -3 \cdot -8 \cdot -12 \cdot 5$
- D $-12 \cdot -3 \cdot -8 \cdot 0 \cdot 5$
- E $5 \cdot 0 \cdot -3 \cdot -8 \cdot -12$

8

A number line goes from -10 to 10 in 4 equal gaps.

What number is 1 mark after -10 ?

- A -8
- B -9
- C 0
- D 5
- E -5

9

The number halfway between two numbers is 4. One of the numbers is -3 .

What is the other number?

- A 11
- B 7
- C 1
- D 8
- E -11

10

The temperature falls from 5°C to -8°C .

By how many degrees does it fall?

- A -3
- B 3
- C 13
- D 8
- E 12

11

A number line goes from 2.5 to 3 in 5 equal gaps.

What is each gap worth?

- A 0.1
- B 0.5
- C 0.05
- D 1
- E 0.2

12

Which number is halfway between -20 and -4 ?

- A -24
- B -8
- C -16
- D 12
- E -12

13

In January the lowest temperature was -11°C and the highest was 7°C .

What is the difference between them?

- A -4 degrees B 4 degrees C 18 degrees D 17 degrees E 77 degrees
-

14

It is -4°C . It rises by 7 degrees, then falls by 10 degrees.

What is it now?

- A 7°C B -7°C C -1°C D 13°C E -21°C
-

15

A number line goes from 40 to 100 in 6 equal gaps.

What number is halfway between the 1st mark and the 5th mark after 40 ?

- A 65 B 60 C 80 D 70 E 50
-

16

Which number is 1.5 less than -2 ?

- A -0.5 B -3.5 C 0.5 D 3.5 E -1.5
-

17

Two temperatures are 10 degrees apart. 0°C is exactly halfway between them.

What is the colder temperature?

- A 0°C B -10°C C 5°C D -5°C E -20°C
-

18

A number line goes from -3 to 2 in 10 equal gaps.

What is each gap worth?

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

19

On a mountain it is -14°C . The valley is 9 degrees warmer. A town is 11 degrees warmer than the valley.

What is the temperature in the town?

- A -6°C B -16°C C 6°C D 34°C E 4°C

20

The number halfway between a mystery number and 30 is 12.

What is the mystery number?

A -18

B 6

C 18

D 21

E -6

Part 2: Write your answer

21

A number line goes from 0 to 3,000 in 4 equal gaps.

What is each gap worth?

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

22

What is the difference between -17°C and 8°C , in degrees?

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

23

Which number is halfway between -12 and 30 ?

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

24

It is -13°C . It rises by 21 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.

25

A number line goes from 1,000 to 2,000 in 8 equal gaps.

What number is 5 marks after 1,000?

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

26

The temperature falls from 12°C to -9°C .

By how many degrees did it fall?

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

27

The number halfway between -10 and a mystery number is 6.

What is the mystery number?

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

Answer sheet

11+ Maths Practice Paper · Year 6 · Lesson 1.4: Number line dynamics and negative numbers

Name

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

Part 1: Multiple choice

Ex	A ☐	B ☐	C ☐	D ☐	E ☒
1	A ☐	B ☐	C ☐	D ☐	E ☐
2	A ☐	B ☐	C ☐	D ☐	E ☐
3	A ☐	B ☐	C ☐	D ☐	E ☐
4	A ☐	B ☐	C ☐	D ☐	E ☐
5	A ☐	B ☐	C ☐	D ☐	E ☐
6	A ☐	B ☐	C ☐	D ☐	E ☐
7	A ☐	B ☐	C ☐	D ☐	E ☐
8	A ☐	B ☐	C ☐	D ☐	E ☐
9	A ☐	B ☐	C ☐	D ☐	E ☐
10	A ☐	B ☐	C ☐	D ☐	E ☐
11	A ☐	B ☐	C ☐	D ☐	E ☐
12	A ☐	B ☐	C ☐	D ☐	E ☐
13	A ☐	B ☐	C ☐	D ☐	E ☐
14	A ☐	B ☐	C ☐	D ☐	E ☐
15	A ☐	B ☐	C ☐	D ☐	E ☐
16	A ☐	B ☐	C ☐	D ☐	E ☐
17	A ☐	B ☐	C ☐	D ☐	E ☐
18	A ☐	B ☐	C ☐	D ☐	E ☐
19	A ☐	B ☐	C ☐	D ☐	E ☐
20	A ☐	B ☐	C ☐	D ☐	E ☐

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

21				
22				
23				
24				
25				
26				
27				

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 24 degrees	15 up to 0 °C, then 9 more: 24.
2	A 0.75	Each gap is worth $1 \div 4 = 0.25$. 0.25, 0.5, 0.75.
3	E -5 °C	Work backwards: fall 8 degrees from 3 °C. Down 3 to 0 °C, then 5 more: -5 °C.
4	B -2	The gap is 10. Half of it is 5. $-7 + 5 = -2$.
5	D -9 °C	Down 6 to 0 °C. That leaves 9 more: -9 °C.
6	D 2	The gap is 0.8. Half of it is 0.4. $1.6 + 0.4 = 2$.
7	B -12 · -8 · -3 · 0 · 5	The furthest below zero is coldest: -12, -8, -3, 0, 5.
8	E -5	The difference is 20. $20 \div 4 = 5$, so each gap is worth 5. $-10 + 5 = -5$.
9	A 11	From -3 to 4 is 7. Go 7 more past 4: 11.
10	C 13	Down 5 to 0 °C, then 8 more: 13.
11	A 0.1	The difference is 0.5. $0.5 \div 5 = 0.1$.
12	E -12	The gap is 16. Half of it is 8. $-20 + 8 = -12$.
13	C 18 degrees	11 up to 0 °C, then 7 more: 18.
14	B -7 °C	$-4 + 7 = 3$. Then $3 - 10 = -7$.
15	D 70	Each gap is 10, so the marks are 50 and 90. Halfway between them is 70.
16	B -3.5	Already below zero: $2 + 1.5 = 3.5$ below zero, -3.5.
17	D -5 °C	Each is 5 degrees from 0 °C. The colder one is -5 °C.
18	A 0.5	The difference is 5. $5 \div 10 = 0.5$.
19	C 6 °C	Valley: $-14 + 9 = -5$ °C. Town: $-5 + 11 = 6$ °C.
20	E -6	From 12 to 30 is 18. Go 18 the other way from 12: -6.
21	750	$3,000 \div 4 = 750$.
22	25	17 up to 0 °C, then 8 more: 25.
23	9	The gap is 42. Half of it is 21. $-12 + 21 = 9$.
24	8	Up 13 to 0 °C. That leaves 8 more: 8 °C.
25	1,625	Each gap is worth $1,000 \div 8 = 125$. $5 \times 125 = 625$. $1,000 + 625 = 1,625$.
26	21	Down 12 to 0 °C, then 9 more: 21.
27	22	From -10 to 6 is 16. Go 16 more past 6: 22.

Score: out of 27