

11+ Maths Practice Paper

Year 5 · Intermediate

Lesson 5.1: Number patterns and linear sequences

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

Here is a sequence: 11, 18, ?, 32, 39

What is the missing term?

A 26

B 25

C 28

D 24

E 21

Answer: B The rule is add 7, so the missing term is $18 + 7 = 25$. Check: $25 + 7 = 32$.

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

Now turn over and start Part 1.

Part 1: Multiple choice

1

Here is a sequence: 112, 101, 90, 79

What is the rule?

- A take away 12 each time
- B take away 10 each time
- C add 11 each time
- D take away 11 each time
- E take away 9 each time

2

Here is a sequence: 2.5, 3, 3.5, 4, ?

What is the next term?

- A 45
- B 4.1
- C 4.5
- D 5
- E 4.6

3

Here is a sequence: ?, 23, 31, 39, 47

What is the first term?

- A 7
- B 31
- C 16
- D 14
- E 15

4

Here is a sequence: 3, 6, 12, 24, ?

What is the next term?

- A 48
- B 36
- C 42
- D 27
- E 30

5

Here is a sequence: 8, ?, ?, 26

It adds the same number each time.

What is the first missing term?

- A 13
- B 12
- C 15
- D 17
- E 14

6

Here is a sequence: 4, 7, 10, 13, ...

What is the 20th term?

- A** 58 **B** 62 **C** 60 **D** 61 **E** 64
-

7

Here is a sequence: 3.9, 3.7, 3.5, 3.3, ?

What is the next term?

- A** 2.9 **B** 3.1 **C** 1.3 **D** 3.2 **E** 3.5
-

8

Here is a sequence: 400, 200, 100, 50, ?

What is the next term?

- A** 25 **B** 30 **C** 40 **D** 45 **E** 0
-

9

Here is a sequence: 6, 12, 18, 24, ...

Which term is 54?

- A** the 8th **B** the 54th **C** the 9th **D** the 6th **E** the 10th
-

10

Here is a sequence: 2, 6, ?, 54, 162

What is the missing term?

- A** 18 **B** 24 **C** 12 **D** 10 **E** 30
-

11

Which of these sequences is geometric?

- A** 5, 10, 15, 20, 25
B 40, 35, 30, 25, 20
C 5, 10, 20, 40, 80
D 1, 3, 6, 10, 15
E 2, 4, 6, 8, 10
-

12

In a sequence, the 3rd term is 20 and the 4th term is 26.
The sequence adds the same number each time.

What is the 1st term?

- A** 2 **B** 14 **C** 6 **D** 10 **E** 8
-

13

Here is a sequence: 5, 10, 15, 20, ...

What is the 50th term?

- A** 255 **B** 500 **C** 245 **D** 250 **E** 55
-

14

Here is a sequence: 2, 3, 5, 8, 12, ?

What is the next term?

- A** 18 **B** 17 **C** 15 **D** 20 **E** 16
-

15

Here is a sequence: 7, 11, 15, 19, ...

What is the 10th term?

- A** 43 **B** 40 **C** 44 **D** 39 **E** 47
-

16

Here is a sequence: 70, ?, ?, ?, 30
It takes away the same number each time.

What is the first missing term?

- A** 50 **B** 62 **C** 40 **D** 65 **E** 60
-

17

Here is a sequence: 3, 7, 11, 15, ...

Which of these numbers is in the sequence?

- A** 54 **B** 51 **C** 53 **D** 50 **E** 52
-

18

Here is a sequence: 9, 5, 1, -3, ?

What is the next term?

A -1

B -8

C 7

D -7

E -6

Part 2: Write your answer

19

Here is a sequence: 147, 159, 171, 183, ?

What is the next term?

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

20

Here is a sequence: 5, ?, ?, 26

It adds the same number each time.

What is the second missing term?

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

21

Here is a sequence: 9, 14, 19, 24, ...

What is the 20th term?

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

22

Here is a sequence: 7, 14, 28, 56, ?

What is the next term?

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

23

Here is a sequence: 5, 9, 13, 17, ...

85 is a term in this sequence. What is its position? (For example, write 7 for the 7th term.)

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

24

Here is a sequence: 2, 3, 5, 8, 13, ?

Each term is the two terms before it added together.

What is the next term?

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

Answer sheet

11+ Maths Practice Paper · Year 5 · Lesson 5.1: Number patterns and linear sequences

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 ☐

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

19			
20			
21			
22			
23			
24			

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	D take away 11 each time	Each gap is 11 ($112 - 101 = 11$) and the terms get smaller, so the rule is take away 11.
2	C 4.5	Every gap is 0.5, so the rule is add 0.5: $4 + 0.5 = 4.5$.
3	E 15	The rule is add 8. Going backwards, do the opposite: $23 - 8 = 15$.
4	A 48	The gaps are not the same: each term is 2 times the one before. $24 \times 2 = 48$.
5	E 14	From 8 to 26 is 3 jumps and 18 altogether, so each jump is $18 \div 3 = 6$. The first missing term is $8 + 6 = 14$.
6	D 61	Each term is 1 more than the 3 times table: $3 \times 20 = 60$, and $60 + 1 = 61$.
7	B 3.1	The terms go down by 0.2 each time: $3.3 - 0.2 = 3.1$.
8	A 25	The gaps are not the same: each term is half of the one before. Half of 50 is 25.
9	C the 9th	The sequence is the 6 times table, and $54 \div 6 = 9$. So 54 is the 9th term.
10	A 18	Each term is 3 times the one before: $6 \times 3 = 18$. Check: $18 \times 3 = 54$.
11	C 5, 10, 20, 40, 80	5, 10, 20, 40, 80 multiplies by 2 each time. The others add or take away.
12	E 8	The rule is add 6 ($26 - 20 = 6$). Going back two jumps: $20 - 6 = 14$, then $14 - 6 = 8$.
13	D 250	The sequence is the 5 times table, so the 50th term is $5 \times 50 = 250$.
14	B 17	The steps are 1, 2, 3, 4, so the next step is 5: $12 + 5 = 17$.
15	A 43	Each term is 3 more than the 4 times table: $4 \times 10 = 40$, and $40 + 3 = 43$.
16	E 60	From 70 to 30 is 4 jumps and 40 altogether, so each jump is $40 \div 4 = 10$. The first missing term is $70 - 10 = 60$.
17	B 51	Each term is 1 less than the 4 times table. $51 + 1 = 52$, which is 4×13 , so 51 is the 13th term.
18	D -7	The terms go down by 4 each time: $-3 - 4 = -7$.
19	195	The rule is add 12: $183 + 12 = 195$.
20	19	From 5 to 26 is 3 jumps and 21 altogether, so each jump is $21 \div 3 = 7$. The terms are 5, 12, 19, 26.
21	104	Each term is 4 more than the 5 times table: $5 \times 20 = 100$, and $100 + 4 = 104$.
22	112	Each term is double the one before: $56 \times 2 = 112$.
23	21	Each term is 1 more than the 4 times table. $85 - 1 = 84$, and $84 \div 4 = 21$. So 85 is the 21st term.
24	21	$8 + 13 = 21$.

Score: out of 24