

11+ Maths Practice Paper

Year 5 · Intermediate

Lesson 4.3: Scale factors and maps

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

On a map, 1 cm stands for 4 km.

Two farms are 5 cm apart on the map.

How far apart are the real farms?

A 20 km

B 24 km

C 5 km

D 16 km

E 9 km

Answer: A Map to real life: multiply. $5 \times 4 = 20$ km.

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

Now turn over and start Part 1.

Part 1: Multiple choice

1

A rectangle is 6 cm by 4 cm.

Which rectangle is an enlargement of it?

- A 12 cm by 12 cm
- B 18 cm by 16 cm
- C 18 cm by 12 cm
- D 18 cm by 4 cm
- E 10 cm by 8 cm

2

A flag is 8 cm wide. An enlarged copy is 56 cm wide.

What is the scale factor?

- A 48
- B 8
- C 6
- D 7
- E 64

3

A poster is an enlargement of a photo by scale factor 5.

The poster is 45 cm tall.

How tall is the photo?

- A 40 cm
- B 9 cm
- C 5 cm
- D 50 cm
- E 225 cm

4

Rectangle A is 4 cm wide and 7 cm long.

Rectangle B is an enlargement of rectangle A. It is 12 cm wide.

How long is rectangle B?

- A 84 cm
- B 11 cm
- C 28 cm
- D 15 cm
- E 21 cm

5

On a map, 1 cm stands for 50 m.

A street is 6 cm long on the map.

How long is the real street?

- A 300 m
- B 250 m
- C 56 m
- D 350 m
- E 3000 m

6

On a map, 1 cm stands for 2 km.
A lake is 4.5 cm long on the map.

How long is the real lake?

- A** 6.5 km **B** 9 km **C** 10 km **D** 4.5 km **E** 8 km
-

7

On a map, 1 cm stands for 4 km.
Two castles are 18 km apart in real life.

How far apart are they on the map?

- A** 5 cm **B** 72 cm **C** 14 cm **D** 4.5 cm **E** 4 cm
-

8

On a map, 1 cm stands for 4 km.
A cycle route has three straight pieces: 2.5 cm, 3 cm and 1.5 cm.

How long is the real cycle route?

- A** 32 km **B** 11 km **C** 28 km **D** 24 km **E** 7 km
-

9

A model ship is made to a scale of 1 : 50.
The model is 14 cm long.

How long is the real ship?

- A** 64 cm **B** 350 cm **C** 140 cm **D** 7000 cm **E** 700 cm
-

10

A scale bar has blocks 1 cm long. The marks read 0, 25, 50, 75 and 100 km.
Two cities are 6 cm apart on the map.

How far apart are the real cities?

- A** 600 km **B** 31 km **C** 150 km **D** 100 km **E** 125 km
-

11

On a plan, 1 cm stands for 20 m.

A real field is 140 m long.

How long is the field on the plan?

- A** 160 cm **B** 7 cm **C** 70 cm **D** 120 cm **E** 2800 cm
-

12

A plan of a classroom has a scale of 1 : 100.

A table is 2 cm long on the plan.

How long is the real table?

- A** 50 cm **B** 2000 cm **C** 102 cm **D** 200 cm **E** 20 cm
-

13

A photo is 6 cm wide and 4 cm tall. It is enlarged so that it is 24 cm wide.

How tall is the enlargement?

- A** 22 cm **B** 12 cm **C** 36 cm **D** 20 cm **E** 16 cm
-

14

On a map, 1 cm stands for 3 km.

Route A is 7 cm long and Route B is 5 cm long on the map.

How much longer is Route A in real life?

- A** 6 km **B** 2 km **C** 15 km **D** 36 km **E** 21 km
-

15

On a map, 1 cm stands for 500 m.

A footpath is 3 cm long on the map.

How long is the real footpath?

- A** 2000 m **B** 503 m **C** 1000 m **D** 150 m **E** 1500 m
-

16

A drawing of a dog is enlarged by scale factor 3.

The tail was 2.5 cm long in the drawing.

How long is the tail in the enlargement?

- A** 7.5 cm **B** 5 cm **C** 9 cm **D** 5.5 cm **E** 6.5 cm

17

On a map, 1 cm stands for 5 km.

A real road is 22.5 km long.

How long is the road on the map?

A 5.5 cm

B 4 cm

C 3.5 cm

D 4.5 cm

E 17.5 cm

18

In a scale drawing, 4 cm stands for 12 m.

What does 1 cm stand for?

A 4 m

B 48 m

C 3 m

D 16 m

E 8 m

Part 2: Write your answer

19

A triangle has sides 3 cm, 4 cm and 5 cm. It is enlarged by scale factor 4.

How many centimetres long is the longest side of the enlargement?

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

20

On a map, 1 cm stands for 20 km.

Two towns are 7 cm apart on the map.

How many kilometres apart are the real towns?

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

21

On a map, 1 cm stands for 250 m.

How many centimetres on the map stand for 1500 m?

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

22

A model train is made to a scale of 1 : 25.

The model is 32 cm long.

How many centimetres long is the real train?

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

23

A rectangle is enlarged by scale factor 6.

The enlarged rectangle is 54 cm long.

How many centimetres long was the original rectangle?

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

24

On a map, 1 cm stands for 2 km.

A hiking trail has three straight pieces: 3.5 cm, 2 cm and 4.5 cm.

How many kilometres long is the real trail?

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

Answer sheet

11+ Maths Practice Paper · Year 5 · Lesson 4.3: Scale factors and maps

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		22	
20		23	
21		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	C 18 cm by 12 cm	Both sides are multiplied by 3: $6 \times 3 = 18$ and $4 \times 3 = 12$.
2	D 7	Big $\div$ small: $56 \div 8 = 7$.
3	B 9 cm	Going back to the photo: divide. $45 \div 5 = 9$ cm.
4	E 21 cm	The scale factor is $12 \div 4 = 3$, so B is $7 \times 3 = 21$ cm long.
5	A 300 m	$6 \times 50 = 300$ m.
6	B 9 km	$4.5 \times 2 = 9$ km.
7	D 4.5 cm	Real life to the map: divide. $18 \div 4 = 4.5$ cm.
8	C 28 km	Add the pieces: $2.5 + 3 + 1.5 = 7$ cm. Then multiply: $7 \times 4 = 28$ km.
9	E 700 cm	1 : 50 means the real ship is 50 times as long, in the same units: $14 \times 50 = 700$ cm.
10	C 150 km	One block is 25 km, so 1 cm stands for 25 km. $6 \times 25 = 150$ km.
11	B 7 cm	Real life to the plan: divide. $140 \div 20 = 7$ cm.
12	D 200 cm	1 : 100 means real lengths are 100 times as long, in the same units: $2 \times 100 = 200$ cm.
13	E 16 cm	The scale factor is $24 \div 6 = 4$, so the height is $4 \times 4 = 16$ cm. Adding 18 (22 cm) is wrong.
14	A 6 km	Route A is $7 - 5 = 2$ cm longer on the map, and $2 \times 3 = 6$ km.
15	E 1500 m	$3 \times 500 = 1500$ m.
16	A 7.5 cm	Multiply by the scale factor: $2.5 \times 3 = 7.5$ cm.
17	D 4.5 cm	Real life to the map: divide. $22.5 \div 5 = 4.5$ cm.
18	C 3 m	$12 \div 4 = 3$, so each centimetre stands for 3 m.
19	20	The longest side is 5 cm, and $5 \times 4 = 20$ cm.
20	140	$7 \times 20 = 140$ km.
21	6	Real life to the map: divide. $1500 \div 250 = 6$ cm.
22	800	The real train is 25 times as long: $32 \times 25 = 800$ cm.
23	9	Going back to the original: divide. $54 \div 6 = 9$ cm.
24	20	Add the pieces: $3.5 + 2 + 4.5 = 10$ cm. Then multiply: $10 \times 2 = 20$ km.

Score: out of 24