

11+ Maths Practice Paper

Year 6 · Advanced

Lesson 4.1: Direct proportion and scaling

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

A recipe for 3 people uses 210 g of rice.

How much rice is needed for 5 people?

A 212 g **B** 350 g **C** 420 g **D** 1050 g **E** 280 g

Answer: B For 1 person: $210 \div 3 = 70$ g. For 5 people: $70 \times 5 = 350$ g.

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

Now turn over and start Part 1.

Part 1: Multiple choice

1

7 m of rope cost £5.60.

How much do 12 m cost?

- A** £10.60 **B** £8.80 **C** £67.20 **D** £10.40 **E** £9.60

2

A recipe for 5 people uses 400 ml of stock.

How much stock is needed for 8 people?

- A** 403 ml **B** 640 ml **C** 800 ml **D** 560 ml **E** 720 ml

3

Which bag of rice is the best buy?

- A** 300 g for £1.35
B 600 g for £2.10
C 400 g for £1.48
D 500 g for £2
E 800 g for £3.04

4

A recipe for 4 people needs 150 g of flour and 3 eggs. You have 600 g of flour and 9 eggs.

What is the most people you can make it for?

- A** 16 **B** 28 **C** 12 **D** 3 **E** 13

5

A machine fills 84 bottles in 3 minutes.

How many minutes does it take to fill 252 bottles?

- A** 6 **B** 12 **C** 84 **D** 168 **E** 9

6

6 apples cost £1.38.

How many apples can you buy with £3.22?

- A** 12 **B** 16 **C** 15 **D** 14 **E** 13
-

7

A recipe for 6 people uses 225 g of sugar.

How much sugar is needed for 10 people?

- A** 229 g **B** 450 g **C** 300 g **D** 400 g **E** 375 g
-

8

Pack A has 6 pens for £2.70. Pack B has 8 pens for £3.44.

How much less does 1 pen cost in the better-value pack?

- A** 74p **B** 8p **C** 43p **D** 2p **E** 45p
-

9

A recipe for 12 people uses 18 tomatoes.

How many tomatoes are needed for 8 people?

- A** 14 **B** 6 **C** 9 **D** 12 **E** 16
-

10

A taxi costs £3 to get in, then £2 for each mile. A 2-mile ride costs £7. Tom says a 4-mile ride costs £14.

What does a 4-mile ride really cost?

- A** £14 **B** £8 **C** £11 **D** £12 **E** £10
-

11

5 identical tins weigh 2100 g.

What do 8 of the tins weigh?

- A** 3360 g **B** 2103 g **C** 4200 g **D** 2900 g **E** 3200 g
-

12

A car uses 6 litres of petrol to travel 84 km.

How far can it travel on 15 litres?

- A** 93 km **B** 210 km **C** 168 km **D** 252 km **E** 180 km
-

13

Ali reads 36 pages in 4 days. He reads the same number of pages each day.

How many days does it take Ali to read 117 pages?

- A** 9 **B** 12 **C** 13 **D** 14 **E** 29
-

14

6 cartons of juice cost £5.40.

How much do 11 cartons cost?

- A** £10.40 **B** £9 **C** £9.40 **D** £9.90 **E** £59.40
-

15

Which pack of batteries is the best buy?

- A** 4 batteries for £3.20
B 6 batteries for £4.50
C 8 batteries for £6.24
D 12 batteries for £9.12
E 10 batteries for £7.40
-

16

A recipe for 6 people needs 240 g of oats and 90 g of butter. You have 600 g of oats and 270 g of butter.

What is the most people you can make it for?

- A** 15 **B** 18 **C** 12 **D** 33 **E** 3
-

17

3 kg of apples cost £4.50 and 2 kg of pears cost £3.60.

How much more does 1 kg of pears cost than 1 kg of apples?

- A** 90p **B** 30p **C** £1.50 **D** £1.80 **E** 10p
-

18

A printer prints 45 pages in 3 minutes.

How many pages does it print in 14 minutes?

- A** 56 **B** 135 **C** 210 **D** 225 **E** 195
-

19

Pancakes for 4 people use 150 g of flour. Mia uses 375 g of flour.

How many people are her pancakes for?

A 10

B 225

C 8

D 12

E 6

20

6 friends pay £54 altogether for cinema tickets. 2 more friends join them.

How much do all the tickets cost now?

A £72

B £56

C £63

D £108

E £60

Part 2: Write your answer

21

4 pens cost £1.80.

How many pence do 9 pens cost?

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

22

A recipe for 6 people uses 420 g of pasta.

How many grams of pasta are needed for 9 people?

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

23

7 identical books weigh 2450 g.

How many grams do 4 of the books weigh?

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

24

8 rolls cost £2.40.

How many rolls can you buy with £6.90?

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

25

A recipe for 5 people uses 350 ml of milk.

How many ml of milk are needed for 8 people?

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

26

A machine fills 96 bags in 8 minutes.

How many minutes does it take to fill 228 bags?

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

27

A recipe for 3 people needs 2 eggs and 150 g of flour. You have 10 eggs and 600 g of flour.

What is the most people you can make it for?

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

Answer sheet

11+ Maths Practice Paper · Year 6 · Lesson 4.1: Direct proportion and scaling

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	E £9.60	1 m costs $560\text{p} \div 7 = 80\text{p}$, so 12 m cost $12 \times 80\text{p} = 960\text{p}$, which is £9.60.
2	B 640 ml	For 1 person: $400 \div 5 = 80$ ml. For 8 people: $80 \times 8 = 640$ ml.
3	B 600 g for £2.10	The price of 100 g: 45p, 37p, 40p, 35p and 38p. The 600 g bag is cheapest for 100 g.
4	C 12	The flour is enough for $600 \div 150 = 4$ lots (16 people), but the eggs are enough for $9 \div 3 = 3$ lots (12 people). The eggs run out first.
5	E 9	In 1 minute it fills $84 \div 3 = 28$ bottles. $252 \div 28 = 9$ minutes.
6	D 14	1 apple costs $138 \div 6 = 23\text{p}$. $322 \div 23 = 14$ apples.
7	E 375 g	For 2 people: $225 \div 3 = 75$ g. For 10 people: $75 \times 5 = 375$ g.
8	D 2p	Pack A: $270 \div 6 = 45\text{p}$ a pen. Pack B: $344 \div 8 = 43\text{p}$ a pen. $45\text{p} - 43\text{p} = 2\text{p}$.
9	D 12	For 4 people: $18 \div 3 = 6$. For 8 people: $6 \times 2 = 12$.
10	C £11	The fare is not in direct proportion, so do not double. $\text{£}3 + 4 \times \text{£}2 = \text{£}11$.
11	A 3360 g	1 tin weighs $2100 \div 5 = 420$ g, so 8 tins weigh $8 \times 420 = 3360$ g.
12	B 210 km	1 litre takes it $84 \div 6 = 14$ km, so 15 litres take it $15 \times 14 = 210$ km.
13	C 13	Each day he reads $36 \div 4 = 9$ pages. $117 \div 9 = 13$ days.
14	D £9.90	1 carton costs $540 \div 6 = 90\text{p}$, so 11 cartons cost $11 \times 90\text{p} = 990\text{p}$, which is £9.90.
15	E 10 batteries for £7.40	The price of one battery: 80p, 75p, 78p, 74p and 76p. The pack of 10 is cheapest for one.
16	A 15	1 person needs $240 \div 6 = 40$ g of oats and $90 \div 6 = 15$ g of butter. The oats are enough for $600 \div 40 = 15$ people; the butter for $270 \div 15 = 18$ people. The oats run out first.
17	B 30p	Apples: $450 \div 3 = 150\text{p}$ a kg. Pears: $360 \div 2 = 180\text{p}$ a kg. $180\text{p} - 150\text{p} = 30\text{p}$.
18	C 210	In 1 minute: $45 \div 3 = 15$ pages. In 14 minutes: $14 \times 15 = 210$.
19	A 10	1 person needs $150 \div 4 = 37.5$ g, which is awkward. Go through 2 people instead: 75 g. $375 \div 75 = 5$ lots of 2 people, which is 10 people.
20	A £72	1 ticket costs $\text{£}54 \div 6 = \text{£}9$, and there are now 8 friends: $8 \times \text{£}9 = \text{£}72$.
21	405	1 pen costs $180 \div 4 = 45\text{p}$, so 9 pens cost $9 \times 45 = 405\text{p}$.
22	630	For 3 people: $420 \div 2 = 210$ g. For 9 people: $210 \times 3 = 630$ g.
23	1,400	1 book weighs $2450 \div 7 = 350$ g, so 4 books weigh $4 \times 350 = 1400$ g.
24	23	1 roll costs $240 \div 8 = 30\text{p}$. £6.90 is 690p, and $690 \div 30 = 23$ rolls.

Q	Answer	How to get it
25	560	For 1 person: $350 \div 5 = 70$ ml. For 8 people: $70 \times 8 = 560$ ml.
26	19	In 1 minute it fills $96 \div 8 = 12$ bags. $228 \div 12 = 19$ minutes.
27	12	The eggs are enough for $10 \div 2 = 5$ lots (15 people), the flour for $600 \div 150 = 4$ lots (12 people). The flour runs out first.

Score: out of 27