

11+ Maths Practice Paper

Year 6 · Advanced

Lesson 1.6: HCF and LCM mastery

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

What is the LCM of 12 and 18?

A 36

B 216

C 6

D 72

E 30

Answer: A Count in 18s: 18, 36. 36 is in the 12 times table.

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

Now turn over and start Part 1.

Part 1: Multiple choice

1

What is the HCF of 12, 18 and 30?

- A 12 B 3 C 2 D 6 E 180

2

What is the LCM of 2, 3 and 4?

- A 24 B 12 C 9 D 6 E 4

3

A floor is 12 m by 18 m. It is covered exactly with the biggest square tiles possible.

How many tiles are needed?

- A 12 B 36 C 216 D 3 E 6

4

Two buses leave together at 9:00. One leaves every 12 minutes and the other every 15 minutes.

When do they next leave together?

- A 10:00 B 9:27 C 9:03 D 12:00 E 9:30

5

Sausages come in packs of 10 and buns in packs of 8.

What is the smallest number of packs of buns needed to have the same number of buns as sausages?

- A 40 B 4 C 5 D 8 E 10

6

What is the HCF of 48 and 72?

- A 6 B 12 C 8 D 144 E 24

7

What is the LCM of 14 and 21?

- A 42 B 294 C 7 D 35 E 84

8

The LCM of 8 and another number is 24. The other number is odd and less than 8.
What is the other number?

- A** 1 **B** 6 **C** 3 **D** 5 **E** 7

9

Which pair of numbers has an LCM of 30?

- A** 5 and 10 **B** 6 and 10 **C** 3 and 15 **D** 4 and 15 **E** 10 and 20

10

Three bells ring every 4, 6 and 10 minutes. They ring together at 10:00.
When do they next ring together?

- A** 10:30 **B** 10:20 **C** 14:00 **D** 11:00 **E** 12:00

11

Sam has 24 red beads and 40 blue beads. He makes as many identical necklaces as he can, using every bead.

How many blue beads are on each necklace?

- A** 8 **B** 5 **C** 3 **D** 40 **E** 10

12

What is the HCF of 60 and 84?

- A** 420 **B** 6 **C** 4 **D** 12 **E** 24

13

Which number between 50 and 80 is a common multiple of 6 and 8?

- A** 60 **B** 64 **C** 54 **D** 56 **E** 72

14

The HCF of 27 and another number is 9. Which could the other number be?

- A** 12 **B** 27 **C** 18 **D** 54 **E** 6

15

Two cogs turn together. One has 12 teeth and the other has 20 teeth.

How many teeth must pass before the same two teeth meet again?

- A** 60 **B** 240 **C** 4 **D** 32 **E** 120
-

16

A rectangle 15 cm by 25 cm is cut into the biggest possible squares, all the same size, with nothing left over.

How many squares are there?

- A** 15 **B** 5 **C** 375 **D** 25 **E** 75
-

17

The LCM of 9 and another number is 36. The other number is even and less than 9.

What is the other number?

- A** 12 **B** 2 **C** 6 **D** 8 **E** 4
-

18

What is the HCF of 90 and 126?

- A** 9 **B** 18 **C** 6 **D** 630 **E** 36
-

19

Three lights flash together. They flash every 6, 8 and 12 seconds.

After how many seconds do they next flash together?

- A** 48 **B** 576 **C** 24 **D** 12 **E** 2
-

20

Ali packs 36 pencils and 48 pens into as many identical boxes as possible, with nothing left over.

How many items are in each box?

- A** 3 **B** 12 **C** 84 **D** 7 **E** 4

Part 2: Write your answer

21

What is the HCF of 42 and 70?

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

22

What is the LCM of 12 and 16?

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

23

What is the LCM of 3, 4 and 5?

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

24

What is the HCF of 24, 36 and 60?

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

25

A floor is 20 m by 30 m. It is covered exactly with the biggest square tiles possible.

How many tiles are needed?

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

26

Two buses leave together. One leaves every 20 minutes and the other every 25 minutes.

After how many minutes do they next leave together?

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

27

What is the smallest number of sweets that can be shared equally between 4, 6 or 9 children, with none left over?

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

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		25	
22		26	
23		27	
24			

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	D 6	6 is the biggest number that goes into all three.
2	B 12	Count in 4s: 4, 8, 12. 12 is in the 2 and 3 times tables too.
3	E 6	The biggest tile is the HCF, 6 m: 2 along and 3 across, so 6 tiles.
4	A 10:00	The LCM of 12 and 15 is 60 minutes, so 10:00.
5	C 5	The LCM of 10 and 8 is 40. $40 \div 8 = 5$ packs of buns.
6	E 24	24 goes into 48 (twice) and 72 (3 times).
7	A 42	Count in 21s: 21, 42. 42 is in the 14 times table.
8	C 3	Count in 8s: 8, 16, 24. 24 is the first in the 3 times table, so the LCM of 8 and 3 is 24.
9	B 6 and 10	Count in 10s: 10, 20, 30. 30 is the first in the 6 times table.
10	D 11:00	The LCM of 4, 6 and 10 is 60 minutes, so 11:00.
11	B 5	The HCF of 24 and 40 is 8 necklaces. $40 \div 8 = 5$ blue beads on each.
12	D 12	12 goes into 60 (5 times) and 84 (7 times).
13	E 72	The common multiples of 6 and 8 are 24, 48, 72, ... Only 72 is between 50 and 80.
14	C 18	9 goes into 18 and 27, and nothing bigger goes into both.
15	A 60	That is the LCM of 12 and 20: 60.
16	A 15	The squares are the HCF, 5 cm: 3 along and 5 across, so 15 squares.
17	E 4	Count in 9s: 9, 18, 27, 36. 36 is the first in the 4 times table. With 2 or 6 the LCM would be 18.
18	B 18	18 goes into 90 (5 times) and 126 (7 times).
19	C 24	The LCM of 6, 8 and 12 is 24.
20	D 7	The HCF of 36 and 48 is 12 boxes. Each box has 3 pencils and 4 pens: 7 items.
21	14	14 goes into 42 (3 times) and 70 (5 times).
22	48	Count in 16s: 16, 32, 48. 48 is in the 12 times table.
23	60	Their only common factor is 1, so multiply: $3 \times 4 \times 5 = 60$.
24	12	12 is the biggest number that goes into all three.
25	6	The HCF is 10 m: 2 along and 3 across, so 6 tiles.
26	100	The LCM of 20 and 25 is 100.
27	36	The LCM of 4, 6 and 9 is 36.

Score: out of 27