

8300

GCSE MATHEMATICS

Foundation tier – Questions by Topic

Number

Finding the lowest common multiple (LCM)

v1.0

Name _____

Materials

For this paper you must have:

- Mathematical instruments

Information

- The marks for questions are shown in brackets

Advice

- In all calculations, show clearly how you work out your answer

For questions 1 to 4 you must **NOT** use a calculator.



Q1.

Work out the lowest common multiple (LCM) of 20 and 25

(Total 1 mark)

Q2.

(a) Write down **all** the factors of 18

(2)

(b) Work out the lowest common multiple (LCM) of 12 and 15

(2)

(Total 4 marks)

Q3.

The first buses to X and Y leave a bus station at 7 am

Buses to X leave every 25 minutes.

Buses to Y leave every 20 minutes.

When will the buses to X and Y next leave at the same time?

(Total 3 marks)

Q4.

Pens are sold in boxes of 10

Pencils are sold in boxes of 8

Rulers are sold in boxes of 5

A teacher wants to buy the same number of pens, pencils and rulers.

Work out the **smallest** number of boxes of each item he could buy.

(Total 3 marks)

For the rest of the questions, you **MAY** use a calculator.



Q5.

Circle the lowest common multiple (LCM) of 5, 15 and 25

5

45

75

150

(Total 1 mark)

Q6.

(a) As a product of prime factors $40 = 2^3 \times 5$

Write 50 as a product of prime factors.

(2)

(b) Work out the Least Common Multiple of 40 and 50

(2)

(Total 4 marks)

Q7.

(a) Work out the highest common factor (HCF) of 15 and 20

(1)

(b) Work out the lowest common multiple (LCM) of 6 and 8

(2)

(Total 3 marks)

Q8.

Work out the lowest common multiple (LCM) of 120 and 144

(Total 2 marks)

Q9.

Work out the lowest common multiple (LCM) of 20, 30 and 40
Circle your answer.

10

120

240

24 000

(Total 1 mark)

Q10.

$$x = 2^2 \times 3 \times 5 \quad y = 2 \times 3^2 \times 5^2$$

(a) Work out the Highest Common Factor (HCF) of x and y .

(1)

(b) Work out the Least Common Multiple (LCM) of x and y .

(2)

(Total 3 marks)

Q11.

Jenny buys packs of sausages and packs of bread rolls.
There are

25 bread rolls in a pack

8 sausages in a pack

She needs exactly **twice** as many sausages as bread rolls.
Work out the smallest number of each pack she could buy.

(Total 3 marks)

Q12.

To make one cheese sandwich, Gina uses one bread roll and two cheese slices.

Pack of 15 bread rolls

£1.88

Pack of 20 cheese slices

£2.15

She is going to buy enough packs to

have exactly twice as many cheese slices as bread rolls
make **more than** 100 cheese sandwiches.

Work out the least amount she can spend.

(Total 4 marks)

Q13.

(a) Work out the highest common factor (HCF) of 12 and 20

(2)

(b) Work out the lowest common multiple (LCM) of 6 and 8

(2)

(Total 4 marks)

Q14.

Q and R are two numbers.

As a product of prime factors,

$$Q = 2^3 \times 3 \times a^3$$

$$R = 2^4 \times 3^2 \times a^2$$

(a) The highest common factor (HCF) of Q and R is 4056
Work out the value of a .

(2)

(b) Work out the lowest common multiple (LCM) of Q and R .

(2)

(Total 4 marks)

Q15.

(a) I am thinking of two different integers.

They are both less than 10

Their lowest common multiple (LCM) is four times the larger number.

Work out one possible pair of numbers.

(1)

(b) a , b and c are different prime numbers.

$$N = a \times b \times c$$

Is 6 the smallest possible value of N ?

Tick a box.

Yes

☐

No

☐

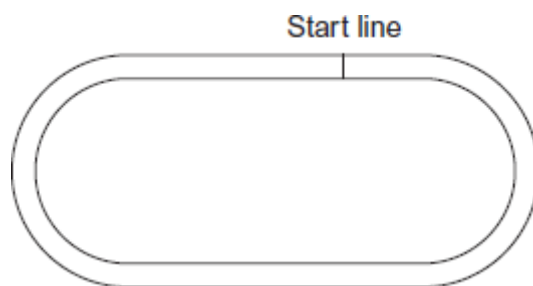
Give reasons for your answer.

(2)

(Total 3 marks)

Q16.

Chris and Becky cycle around a 200 metre track in the same direction.



Not drawn accurately

- (a) Chris cycles at a steady speed of 10 metres per second.
Show that he takes 20 seconds to go **once** around the track.
- (b) Becky also cycles at a steady speed.
It takes her 25 seconds to go **once** around the track.
She leaves the start line at the same time as Chris.
How far has Becky cycled when they are next at the start line together?

(1)

(3)

(Total 4 marks)