

Applying LCM and HCF

Maths

Mr Lund



Applying LCM and HCF

1. Amir is organising a buffet.
There are 15 cups in a packet.
There are 18 plates in a packet.

He needs to buy exactly the same number of cups and plates.

What is the smallest number of each packet Amir can buy?

2. A red light flashes every 12 minutes.
A green light flashes every 15 minutes.
Both lights flash together at 11 am.

When is the next time that both lights flash together?



Applying LCM and HCF

3. You are given that

$$A = 2 \times 3^2 \times 5^2 \times 7$$

$$B = 2^3 \times 3 \times 7$$

- What is the value of A?
- Work out the LCM of A and B
- Work out the HCF of A and B
- Does B divide equally by 6?
How do you know?

4. A number P can be written as a product of its prime factors as

$$P = 2^4 \times 3^2 \times 5^3 \times 7^2 \times 11 \times 17$$

Write 10P as a product of its prime factors.

5. The Highest Common Factor (HCF) of two numbers is 3

The Lowest Common Multiple (LCM) of the same two numbers is 45

What could the numbers be?



Answers



Applying LCM and HCF

1. Amir is organising a buffet.

There are 15 cups in a packet.

There are 18 plates in a packet.

He need to buy exactly the same number of cups and plates.

What is the smallest number of each packet Amir can buy?

6 packets of cups and 5 packets of plates

2. A red light flashes every 12 minutes.

A green light flashes every 15 minutes.

Both lights flash together at 11 am.
When is the next time that both lights flash together?

LCM of 12 and 15 = 60 mins
Flash every hour so . . . 12:00pm



Applying LCM and HCF

3. You are given that

$$A = 2 \times 3^2 \times 5^2 \times 7$$

$$B = 2^3 \times 3 \times 7$$

- a) What is the value of A? $A = 3150$
- b) Work out the LCM of A and B $12,600$
- c) Work out the HCF of A and B $2 \times 3 \times 7$
- d) Does B divide by equally 6? $= 42$

How do you know? **Yes because 2 and 3 are factors.**

4. A number P can be written as a product of its prime factors as

$$P = 2^4 \times 3^2 \times 5^3 \times 7^2 \times 11 \times 17$$

Write $10P$ as a product of its prime factors. $P = 2^5 \times 3^2 \times 5^4 \times 7^2 \times 11 \times 17$

5. The Highest Common Factor (HCF) of two numbers is 3

The Lowest Common Multiple (LCM) of the same two numbers is 45

What could the numbers be? **9 and 15**

