Least Common Multiple

LO: Find the least common multiple using prime factorisation.

11 September 2025

Week 3, Day 4

Least Common Multiple

LO: Find the least common multiple using prime factorisation.

00:30

My factors are …

I am

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My factors are …

3

27

27

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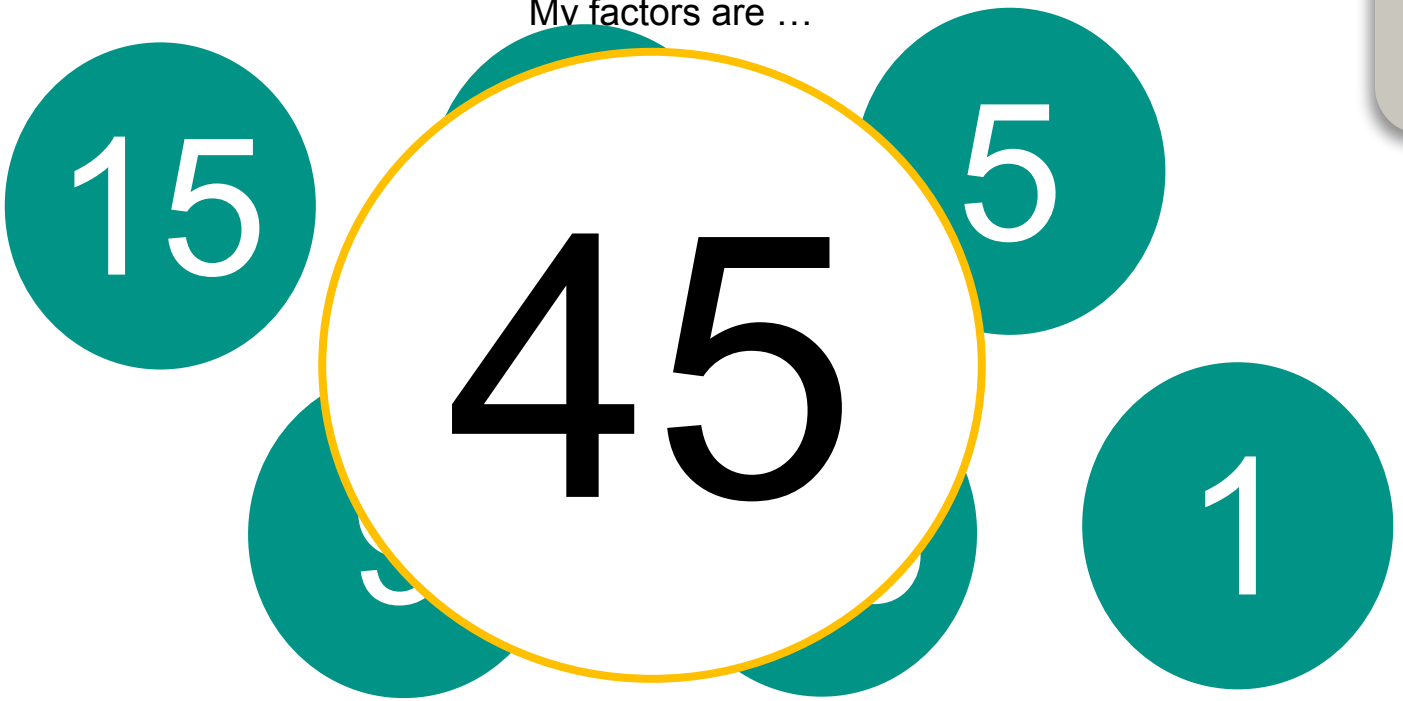

I am

Least Common Multiple

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00:30

My factors are …

54

2

1

54

6

I am

Least Common Multiple

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GCSE/iGCSE Assessment Objective Specification – Foundation/Higher

- use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property

G	use the terms 'odd', 'even', 'prime numbers', 'factors' and 'multiples'
H	identify prime factors, common factors and common multiples

E	find highest common factors (HCF) and lowest common multiples (LCM)

Least Common Multiple(LCM)

LO: To find the least common multiple using Venn diagram.

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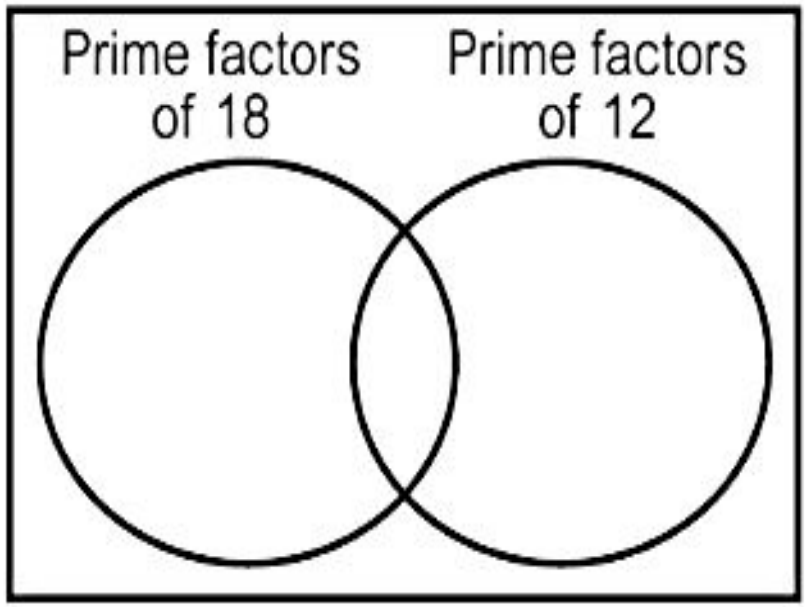
Least Common Multiple

LO: Find the least common multiple using prime factorisation.

03:00

Starter

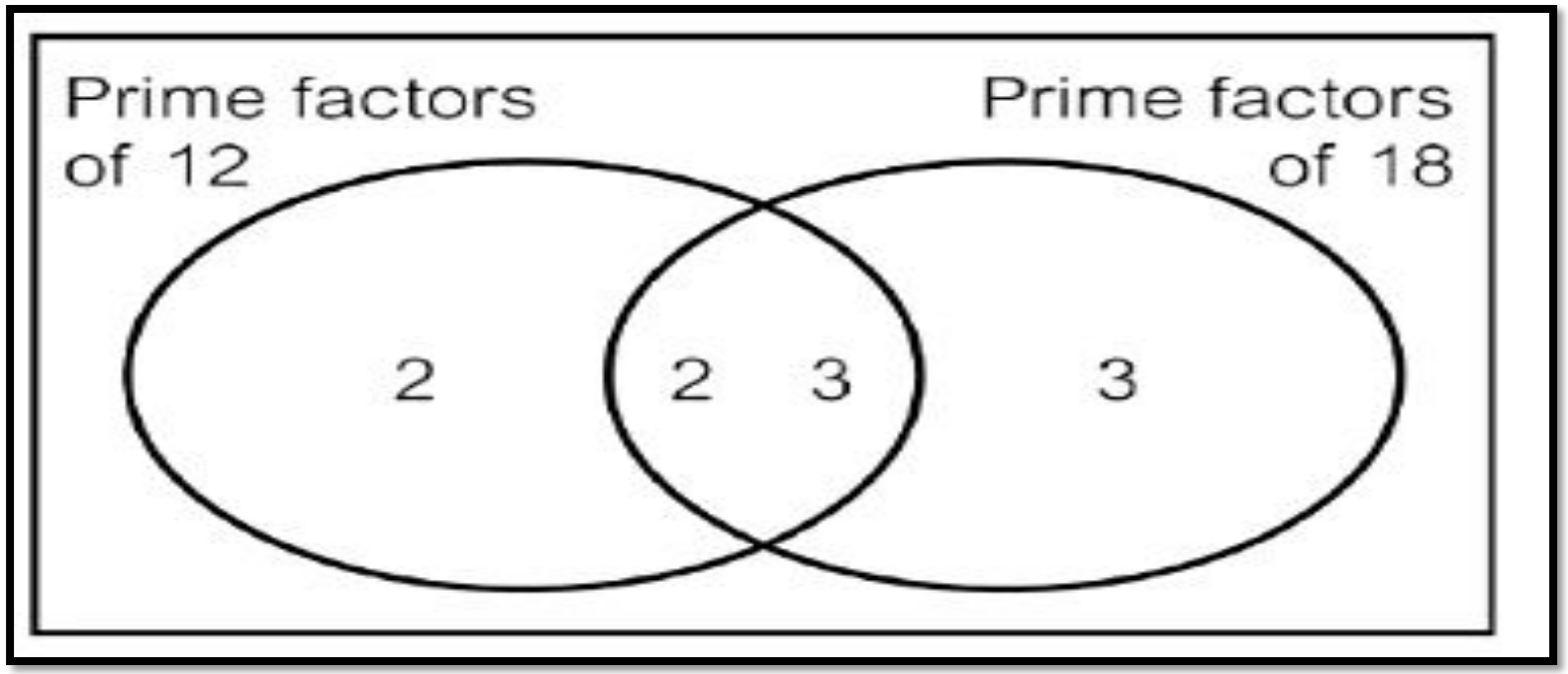
Write the prime factors of 12 and 18 in this Venn diagram.



Least Common Multiple

LO: Find the least common multiple using prime factorisation.

Starter



LO: Find the least common multiple using prime factorisation.

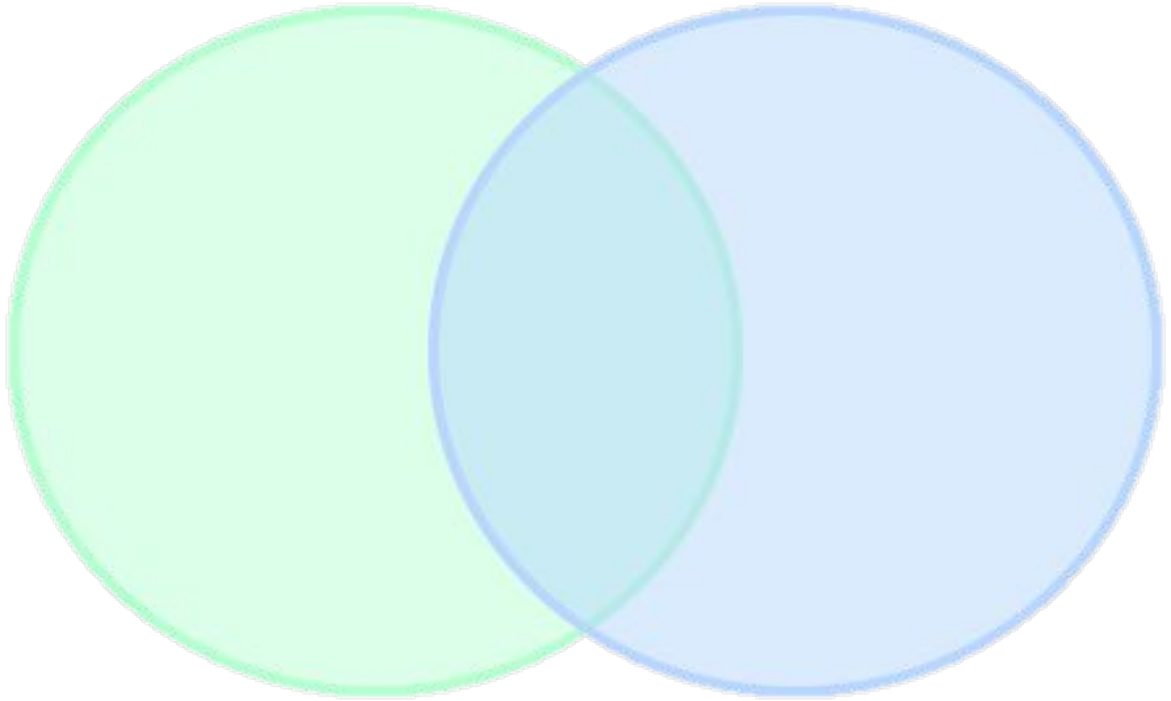
Least Common Multiple

LO: Find the least common multiple using prime factorisation.

Key Concept

05:00

Use prime factorization to find out the LCM of 21 and 45.

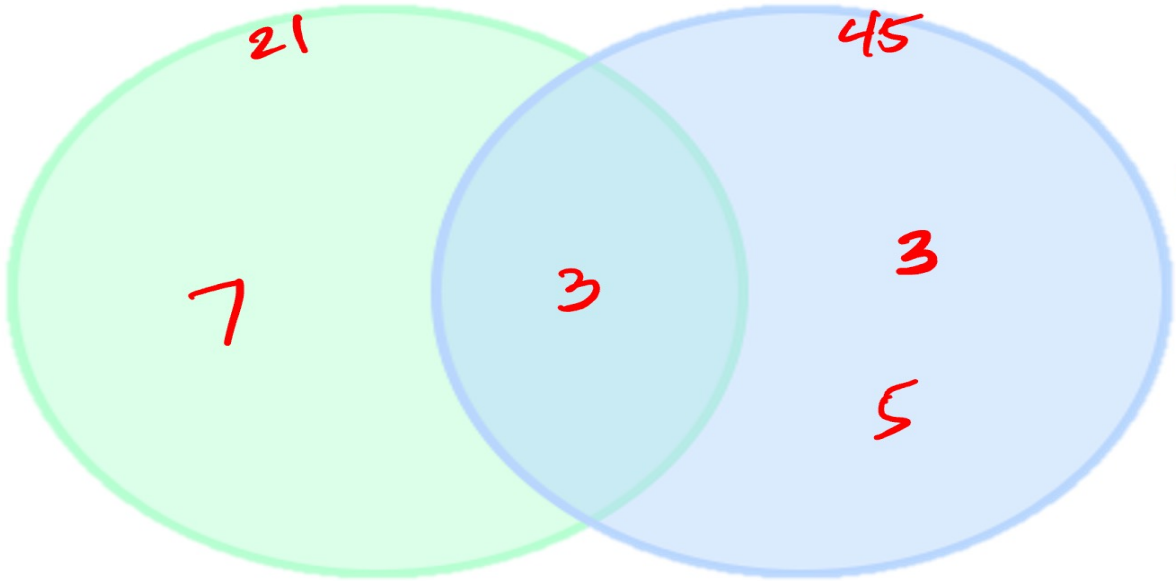


Least Common Multiple

LO: Find the least common multiple using prime factorisation.

Key Concept

Use prime factorization to find out the LCM of 21 and 45.



1. Prime Factorization
   $21 = 3 \times 7$
   $45 = 3^2 \times 5$
2. Get the common and not common prime factors.
   Common : 3
   Not common : $3 \times 5 \times 7$
3. Multiply them.
   LCM = $3 \times 3 \times 5 \times 7$
   LCM = 315

Least Common Multiple

LO: Find the least common multiple using prime factorisation.

Mini-Plenary

03:00

Work out the following problem with your groupmates.

STEM / Problem-solving Two weather satellites pass over the London Eye at 11 am. It takes one satellite 100 minutes to orbit the Earth and it takes the other satellite 120 minutes to orbit the Earth. At what time will both of the satellites next pass over the London Eye at the same time?

9 PM

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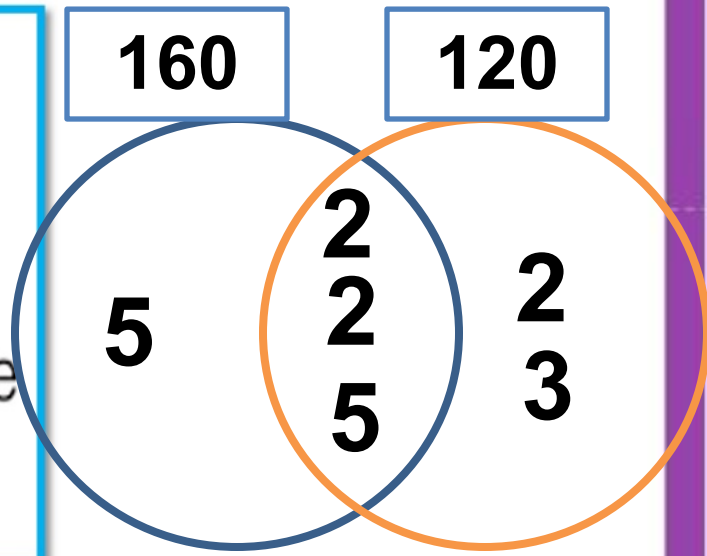
Work out the following problem with your groupmates.

STEM / Problem-solving Two weather satellites pass over the London Eye at 11 am. It takes one satellite 100 minutes to orbit the Earth and it takes the other satellite 120 minutes to orbit the Earth. At what time will both of the satellites next pass over the London Eye at the same time?

↳ LCM of 100 and 120



$100 = 2^2 \times 5^2$

$120 = 2^3 \times 3 \times 5$

Common: $2^2 \times 5$

Not common: $2 \times 3 \times 5$

LCM = $2^2 \times 2 \times 3 \times 5 \times 5$

LCM = 600

600 minutes

↳ convert in hours

$600 \div 60 = 10$ hrs.

11:00 AM + 10 = 9:00 PM

Least Common Multiple(LCM)

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use the terms 'odd', 'even', 'prime numbers', 'factors' and 'multiples'	
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Core 1

Reasoning Use prime factor decomposition to show that the LCM of 21 and 45 is 315.

Core 2

Use prime factor decomposition to find the LCM of each pair of numbers.

a 8 and 36
b 18 and 66
c 28 and 42
d 30 and 75

Core Tasks

Challenge

10:00

a. Keith's Sports sells golf tees in packs of 6. Meanwhile, Clare's Gear sells them in packs of 4. If both shops sold the same number of golf tees this week, what is the smallest number of tees each could have sold?
b. Roy goes hiking every 12 days and swimming every 2 days. He did both kinds of exercise today. How many days from now will he next go both hiking and swimming again?
c. Keith is buying pencils and rubbers from the store. Pencils come in packages of 11, but rubbers are sold in packages of 12. If Keith wishes to purchase the same number of pencils as rubbers, what is the smallest number of rubbers that he can buy?

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Extension

Trains leave Bristol

to Cardiff every 15 minutes
to London every 21 minutes

A train to Cardiff and a train to London both leave Bristol at 11am.

At what time will a train to Cardiff and a train to London next leave Bristol at the same time?

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Plenary

05:00

A is $2 \times 3^3 \times 11^2$

B is $2^3 \times 3^2 \times 5$

Drag these numbers to the correct box:

$2^4 \times 3^2 \times 5^3$

$2^3 \times 3^3 \times 5^3 \times 11^3$

$2^4 \times 3^3 \times 5 \times 11^3$

$2 \times 3^3 \times 5 \times 11^3$

$2^2 \times 3^4 \times 11^2$

$2^3 \times 3^3 \times 5 \times 11^2$

Multiple of A	Multiple of B	Multiple of A and B
		Smallest Multiple of A and B

https://www.mathspad.co.uk/interactives/lowestCommonMultipleTool/lowestCommonMultipleTool.php

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HOW CONFIDENT ARE YOU ABOUT TODAY's TOPIC?

S- secure

M- Met

W- Working towards