Year 9
FACTORS, MULTIPLES AND PRIMES
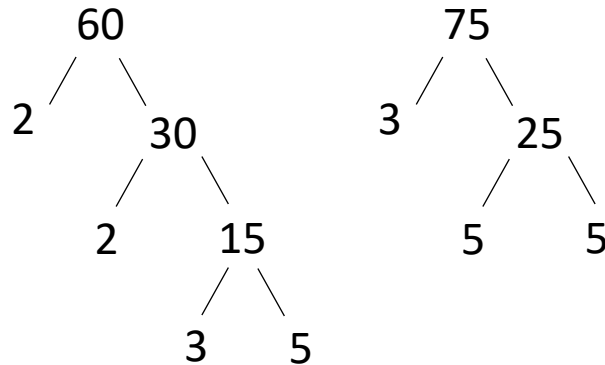
Key Concepts

Prime factor decomposition
Breaking down a number into its prime factors

Highest common factor
Finding the largest number which divides into all numbers given

Lowest common multiple
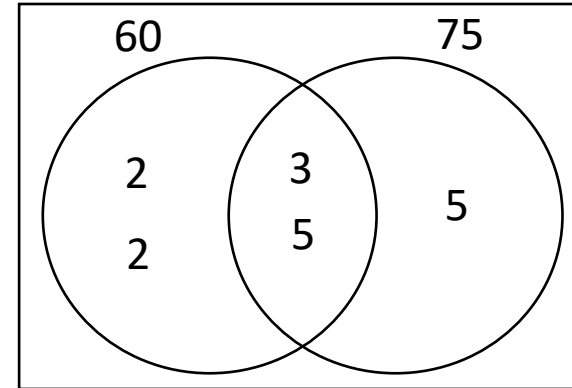Finding the smallest number which both numbers divide into

Examples

Find the **highest common factor** and **lowest common multiple** of 60 and 75:

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

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

HCF − Mulitiply all numbers in the intersection
$$= 3 \times 5 = 15$$

LCM − Multiply all numbers in the Venn diagram
$$= 2 \times 2 \times 3 \times 5 \times 5 = 300$$

29 – 32,34,35

Key Words
Factor
Multiple
Prime
Highest Common Factor
Lowest Common
Multiple

Questions
1) Write 80 as a product of its prime factors
2) Write 48 as a product of its prime factors
3) Find the LCM and HCF of 80 and 48

INTEGERS, ROUNDING AND PLACE VALUE

Key Concepts

Digits are the individual components of a number.

Integers are whole numbers.

Rounding rules:
A value of 5 to 9 rounds the number up.
A value of 0 to 4 keeps the number the same.

Examples

Order the following numbers starting with the smallest:

1)   5, -3, 4, 7, -2
        -3, -2, 4, 5, 7

2)   0.067 0.6   0.56   0.65   0.605
Rewrite   0.067, 0.600, 0.560, 0.650, 0.605
           0.067 0.56   0.6   0.605 0.65

Round 3.527 to:

a) 1 decimal place

    3 . 5 2 7 ⟶ 3.5

b) 2 decimal places

    3 . 5 2 7 ⟶ 3.53

c) 1 significant figure

    3 5 2 7 ⟶ 4

Key Words

Integer   Even
Digit
              Odd
Decimal place
Significant figures

A) Order the following numbers starting with the smallest:
1) 6, -2, 0, -5, 3   2) 0.72, 0.7, 0.072, 0.07, 0.702

B)   Round the following numbers to the given degree of accuracy
1)   14. 1732   (1 d.p.)   2) 0.0568   (2 d.p.)   3) 3418 (1 S.F)

ANSWERS: A1) -5, -2, 0, 3, 6   2) 0.07, 0.072, 0.7, 0.702, 0.72
B1) 14.2 2) 0.06 3) 3000