

# Year 9

## FACTORS, MULTIPLES AND PRIMES

### Key Concepts

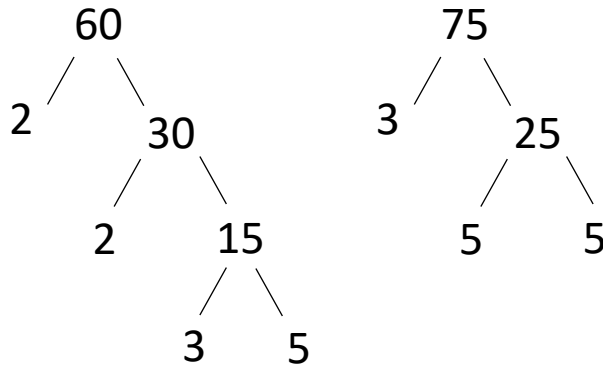
**Prime factor decomposition**  
Breaking down a number into its prime factors

**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

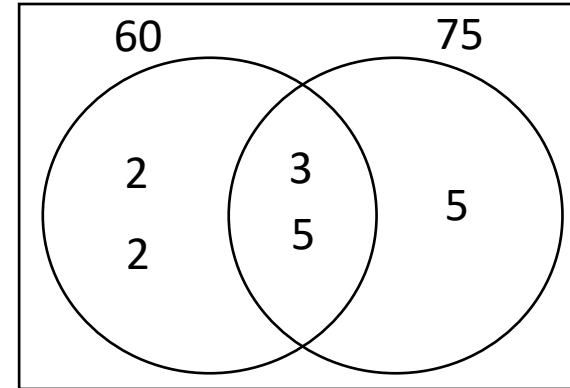
### Examples

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* – Multiply all numbers in the intersection  
 $= 3 \times 5 = 15$

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

 hegartymaths

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

$$3.5\overset{\cdot}{2}7 \rightarrow 3.5$$

b) 2 decimal places

$$3.52\overset{\cdot}{7} \rightarrow 3.53$$

c) 1 significant figure

$$3\overset{\cdot}{5}27 \rightarrow 4$$



1 – 3, 31 – 32

## 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)