

# FACTORS

The factors of a number are the numbers that **divide** exactly into it.

Factors of 12 are

1, 12
2, 6
3, 4

**HCF** Highest Common Factor of 2 given numbers

first find  
the factors

HCF of 8 & 12

1, 8	1, 12
2, <b>4</b>	2, 6
	3, <b>4</b>

**4 is the HCF**

# MULTIPLES

The multiples of a number are its times table

The first few multiples of 3 are **3, 6, 9, 12, ...**

**LCM** Lowest Common Multiple of 2 given numbers

first find  
the multiples

LCM of 4 & 6

8	<b>12</b>
<b>12</b>	18
16	24

# SQUARE NUMBERS

When you square a number - you times it by itself

2 squared is written as  $2^2 = 2 \times 2 = 4$

$$3^2 = 3 \times 3 = 9$$

$$5^2 = 5 \times 5 = 25$$

The opposite of squaring a number is square rooting

$$\sqrt{9} = 3 \quad \text{3 is the root of 9}$$

$$\sqrt{16} = 4$$

# PRIME NUMBERS

A prime number is a number that is only divisible by 1 and itself

It only has the factors 1 and itself

17 is divisible by only 1 and 17 17 is a PRIME NUMBER ✓

15 is divisible by 1, 3, 5 & 15 15 is NOT a prime number ✗

Is 275 a prime number?

It ends in 5, so 5 is a factor so it is NOT ✗

# PRIME FACTORS

A prime factor is a factor that is also a prime number

When we break a number into its prime factors we are finding the prime numbers that multiply to make the number

eg Prime factors of 6 are 2 & 3  $2 \times 3 = 6$

Prime factors of 12 are 2, 2 & 3  $2 \times 2 \times 3 = 12$

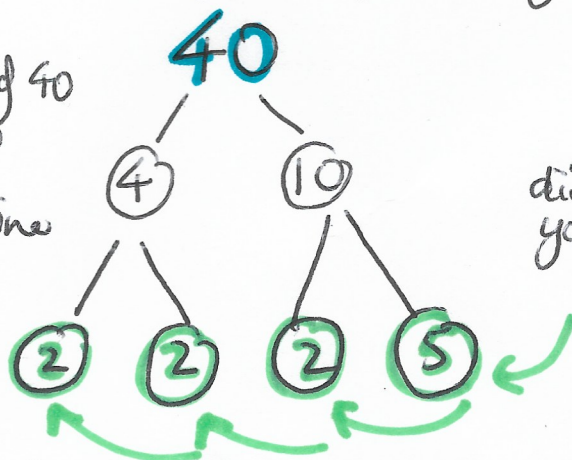
The best way to find prime factors is via a

# PRIME FACTOR TREE

eg finding prime factors of 40

① find a suitable factor of 40  
eg 4 ~~10~~  $40 \div 4 = 10$

② neither 4 nor 10 are prime factors so break down again



just keep dividing until you get prime numbers

Prime factors of 40 =  $2 \times 2 \times 2 \times 5$  OR  $2^3 \times 5$

can be known as expressing 40 as a product of its prime factors