

# Prime Factors

**Prime factors** are prime numbers that are factors of another number.

A prime number has exactly two factors. These are 1 and the number itself.

Any number that is not prime (or 1) is **composite** - it can be written as a product of two or more **prime factors**.

 **Example**

$$6 = 2 \times 3$$

Composite number

Prime factors

 **Example**

Express the product of prime factors in **index form**

$$\begin{aligned} 60 &= 2 \times 2 \times 3 \times 5 \\ &= 2^2 \times 3 \times 5 \end{aligned}$$

 **Example**

$$24 = 2 \times 12$$

12 is **not** a prime number, so we break it down further.

2 is a prime number.

$$= 2 \times 2 \times 6$$

6 is **not** prime so break it down further.

Prime factors

$$= 2 \times 2 \times 2 \times 3$$

All prime factors