Products of Prime Factors

Starter

1. **(Review of last lesson)**

   Add together $\frac{8}{15}$ and $1.14\dot{6}$. Give your answer as a mixed number in its simplest form.

2. Write down the prime numbers below 30.

3. Use a factor tree, or otherwise, to express 60 as a product of it prime factors.

Notes

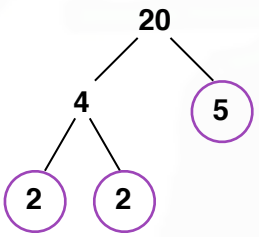
Expressing a number as the ***product of its prime factors*** is called ***prime factor decomposition***.
A ***factor tree*** is a useful diagram to help with this process.

Each number is split into two new numbers that multiply together to get the first number. If one of these new numbers is a prime number, it is circled and the branches stop there. If it is not a prime number further branches are drawn until there are only prime numbers at the end of each branch.

Since it is the product of prime factors, the multiplication symbol, $\times$, is written between the factors. Use ***index notation*** where factors appear more than once.

E.g. 1 By drawing a factor tree, or otherwise, express these numbers as the product of prime numbers. Give your final answer in index notation.
(a) 20 (b) 48 (c) 630

Working: (a)



$$20 = 2 \times 2 \times 5 = 2^2 \times 5$$

Video: Product of prime factors

Solutions to Starter and E.g.s

Exercise

9-1 class textbook:	p118 M5.1 Qu 1-3
A*-G class textbook:	p118 M5.2 Qu 1-4
9-1 homework book:	p44 M5.1/M5.2 Qu 1-3
A*-G homework book:	p32 M5.2 Qu 2-3

Summary

Expressing a number as the ***product of its prime factors*** is called ***prime factor decomposition***. A ***factor tree*** is a useful diagram to help with this process. Use ***index notation*** where factors appear more than once.