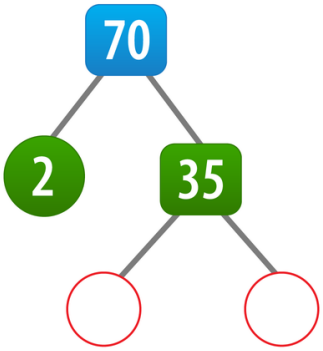
Prime Factorisation

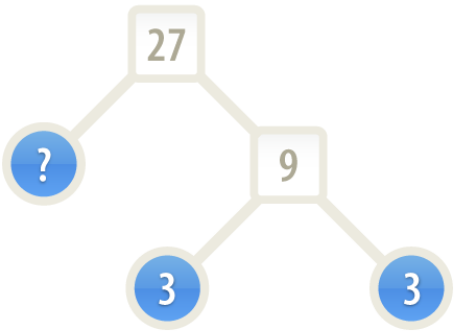
numerise

Core

1: What numbers are missing in the prime factor tree below?

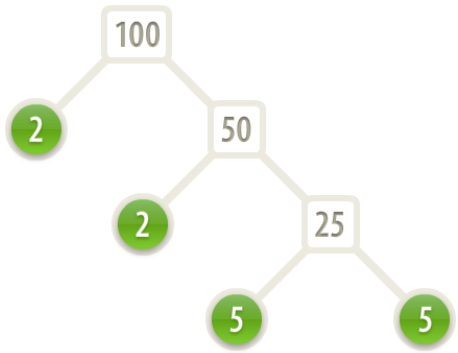


2: What number is missing in this factor tree?



3: Draw a prime factor tree for 42. Use your tree to write 42 as a product of its prime factors.

4: Use this factor tree to find the prime factor decomposition of 100.



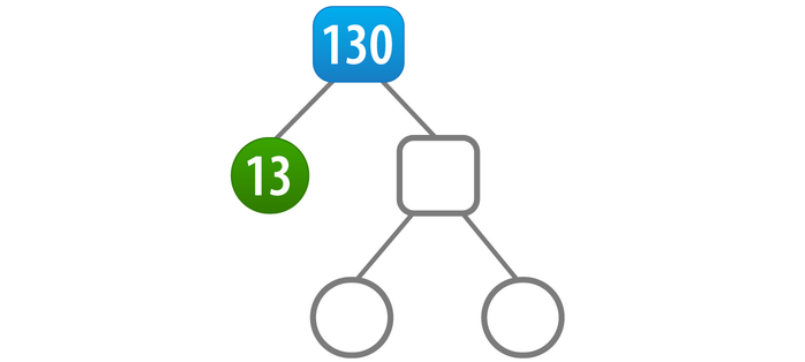
5: Write 66 as the product of its prime factors.

Prime Factorisation

numerise

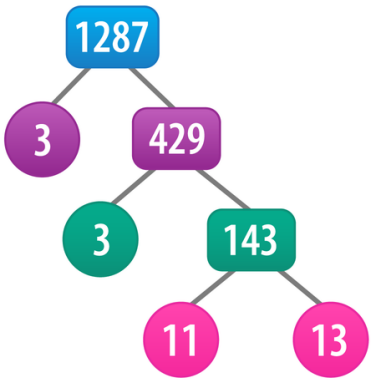
Extension

1: Copy and complete this prime factor tree. Use the tree to write the prime factorisation of 130.



Prime factorisation of 130 = ☐

2: Use the prime factor tree below to write the prime decomposition of 1287 in index form.



3: By first drawing a prime factor tree, write the prime factor decomposition of 90 in index form.

4: Write the prime decomposition of 60 in index form.

5: Write the prime decomposition of 156 in index form.

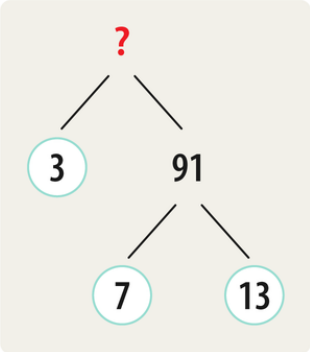
Prime Factorisation

numerise

Challenge

1: Write the prime decomposition of 252 in index form.

2: What is the missing number in the prime factor tree below?



3: What number has the prime decomposition $5^2 \times 41$?

4: Write the prime decomposition of 344 in index form.

Useful primes: 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71

Core:

1. 7 and 5
2. 3
3. 2 x 3 x 7
4. 2 x 2 x 5 x 5
5. 2 x 3 x 11

Extension:

1. 2 x 5 x 13
2. 3^2 x 11 x 13
3. 2 x 3^2 x 5
4. 2^2 x 3 x 5
5. 2^2 x 3 x 13

Challenge:

1. 2^2 x 3^2 x 7
2. 273
3. 1025
4. 2^3 x 43