Prime Factor Decomposition

Mr Lund
Maths

Prime Factor Decomposition

1. Work out.

a) 2 x 2 x 2

b) 3 x 3 x 7

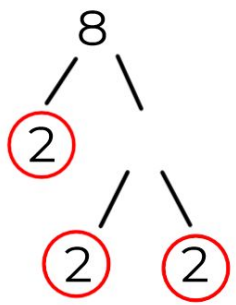
c) 3 x 5 x 5 x 11

2. Match the number cards with their index form.

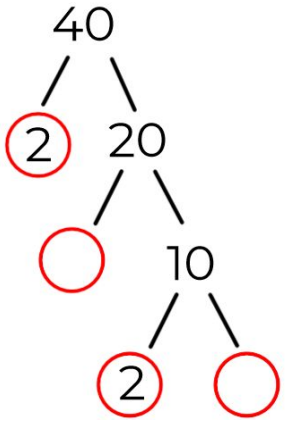
2 x 2 x 2	$3^2 \times 7$
3 x 3 x 7	2^3
3 x 5 x 5 x 11	$3 \times 5^2 \times 11$

3. Complete these prime factor trees.

a)

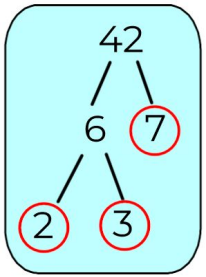


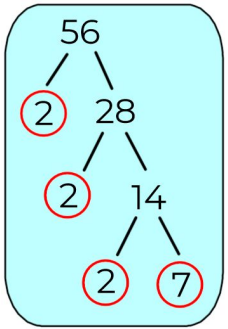
b)



Prime Factor Decomposition

4. Match the factor trees to the correct expressions in index form.





$2^3 \times 7$ | $2 \times 3 \times 7$ | 8×7

Which expression doesn't match? Why?

5. Amir uses a table to find the prime factors of 63.

Prime factors	3	3	7
63	21	7	1

$= 3^2 \times 7$

Draw a prime factor tree for 63

Which method do you prefer?

6. In Index form find the product of prime factors.

a) 105 b) 81 c) 52

Answers

Prime Factor Decomposition

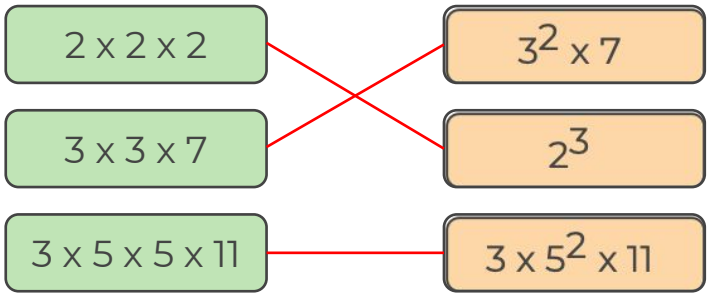
1. Work out.

a) 2 x 2 x 2 = 8

b) 3 x 3 x 7 = 63

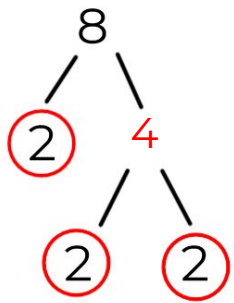
c) 3 x 5 x 5 x 11 = 825

2. Match the number cards with their index form.

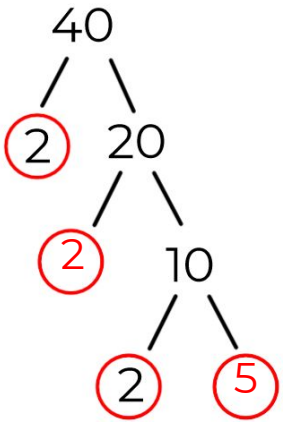


3. Complete these prime factor trees.

a)

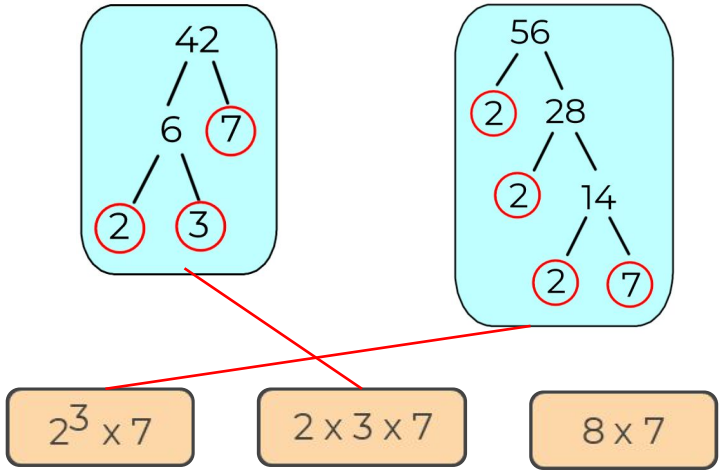


b)



Prime Factor Decomposition

4. Match the factor trees to the correct expressions in index form.



Which expression doesn't match?

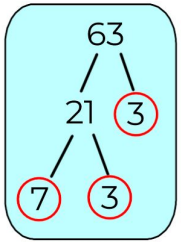
Why? 8 x 7, it is not a product of primes.

5. Amir uses a table to find the prime factors of 63.

Prime factors	3	3	7
63	21	7	1

$= 3^2 \times 7$

Draw a prime factor tree for 63



Which method do you prefer?

6. In Index form find the product of prime factors.

a) 105 $3 \times 5 \times 7$

b) 81 3^4

c) 52 $2^2 \times 13$