# Product of Prime Factors

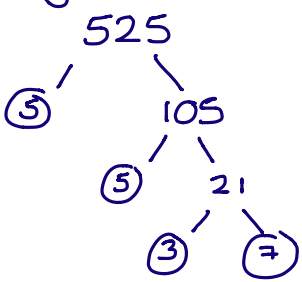
## How to . . .

Write 525 as a product of its prime factors. (product means 'x')

(You need to know what numbers are 'prime')

There are a couple of ways of doing this :-

1. using a prime factor tree :




$525 = 5 \times 5 \times 3 \times 7$

$= 5^2 \times 3 \times 7$

2. division

$$\begin{array}{r|l} 5 & 525 \\ 5 & 105 \\ 3 & 21 \\ 7 & 7 \\ & 1 \end{array}$$

$525 = 5 \times 5 \times 3 \times 7$

$= 5^2 \times 3 \times 7$ **(3)**

Now have a go yourself . . .

**SORTED IT** – express the following as a product of prime factors

| | | |
|---|---|---|
| **a)** 15 | **b)** 10 | **c)** 9 |
| **d)** 18 | **e)** 28 | **f)** 42 |
| **g)** 50 | **h)** 72 | **i)** 94 |

**NAILED IT**

| | | |
|---|---|---|
| **a)** 150 | **b)** 32 | **c)** 96 |
| **d)** 210 | **e)** 240 | **f)** 288 |
| **g)** 576 | **h)** 1372 | **i)** 2744 |

**MASTERED IT**

The below can be written in the form $2^a \times 3^b \times 5^c \times 7^d$. What are the values of a, b, c and d.

| | |
|---|---|
| **a)** 1260 | **b)** 840 |
| **c)** 90 | **d)** 135 |
| **e)** 245 | **f)** 490 |
| **g)** 1152 | **h)** 4116 |

## Exam Questions

**Q1.** Find the prime factors of 102

**Q2.** The number 84 can be written in the form $2^n \times m \times p$, where n, m and p are prime numbers. Find the values of n, m and p.

## Ready to be marked ?

**Checklist**

- ☐ Answer checked
- ☐ Working out shown

**Keywords**

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**Things to remember …**


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**What went well …**

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**Teacher comment ..**