

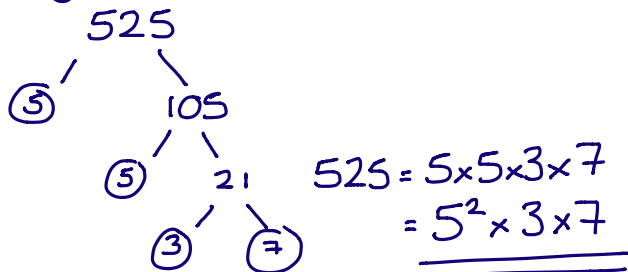
# Product of Prime Factors

**How to ...** means 'x' / You need to know what numbers are 'prime'

Write 525 as a product of its prime factors.

There are a couple of ways of doing this :-

1. using a prime factor tree :



2. division

$$\begin{array}{r} 5 \overline{)525} \\ 5 \overline{)105} \\ 3 \overline{)21} \\ 7 \overline{)7} \\ 1 \end{array} \quad \begin{array}{l} 525 = 5 \times 5 \times 3 \times 7 \\ = 5^2 \times 3 \times 7 \end{array} \quad (3)$$

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

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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 ..**