Factorials

Baseboard **none**

Resources **none**

For any natural number *n*, ***n*!** (referred to as **n factorial**) is defined to be the **product of all the natural numbers from 1 up to *n*.**

The first few factorials are listed below

1!	1	1
2!	1 × 2	2
3!	1 × 2 × 3	6
4!	1 × 2 × 3 × 4	24
5!	1 × 2 × 3 × 4 × 5	120

Puzzle 1 Factorials increase in size very quickly.
You can see this by continuing the table above as far as $10!$

Puzzle 2 Simplify $4! \times 3!$

Puzzle 3 Simplify $\frac{4!}{3!}$

Puzzle 4 Simplify $\frac{10!}{2!4!4!}$

Puzzle 5 Simplify $\frac{10!}{3!3!4!}$

Puzzle 6 Simplify $\frac{10!}{2!3!5!}$