

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!	$1 \times 2 \times 3$	6
4!	$1 \times 2 \times 3 \times 4$	24
5!	$1 \times 2 \times 3 \times 4 \times 5$	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 $\frac{10!}{2!3!5!}$

[Answers](#)