

## Week 3 homework

If  $n$  is a positive integer, then “ $n$  factorial” (written “ $n!$ ”) is the number

$$n! = 1 \times 2 \times 3 \times \cdots \times n.$$

(For example,  $5!$  is  $1 \times 2 \times 3 \times 4 \times 5 = 120$ .)

Can you find a simpler way of writing the following expressions?

$$n! \times (n + 1)$$

$$n! \div n$$

$$n! \div (n - 1)!$$

$$n! \div (n - 2)!$$

*(Hint: Try picking some values for  $n$  and see what you get.)*

Based on your answers, what number do you think  $0!$  should be?