

Working With Factorials:

A. By definition a factorial means multiplying every positive integer less than and including that number.

1. So $n! = n \times (n-1) \times (n-2) \times \dots \times 3 \times 2 \times 1$

2. Also, $0! = 1$ by definition.

*Note: The above steps are very important to know for problems involving probability.

Ex [1] $5! =$ _____.

a. $5! = 5 \times 4 \times 3 \times 2 \times 1 = 120$.

b. The answer is 120.

Ex [2] $7! =$ _____.

a. $7! = 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 5040$.

b. The answer is 5040.

B. It will help considerably if you can memorize the factorials at least to 7. Below is a table of the factorials to 7:

$0! =$	1	$1! =$	1
$2! =$	2	$3! =$	6
$4! =$	24	$5! =$	120
$6! =$	720	$7! =$	5040