Adding Sequences In The Form: n(n!) + (n-1)(n-1)! +...+ 1(1!):

A. This sequence reduces to the following:

$$(n+1)! - 1$$

B. See *Factorials*.

C. Examples:

Ex [1] 1(1!) + 2(2!) + 3(3!) + 4(4!) = _____

   a. The answer is 5! - 1 = 120 - 1 = 119.

Ex [2] 7(7!) + 6(6!) + ... + 2(2!) + 1 = _____

   a. Notice, adding 1 on the end is the same as adding 1(1!).

   b. The answer is 8! - 1 = 40320 - 1 = 40319.