

Problem of the Week-1: A Familiar Sum (Sort of)

It is well-known that $1 + 2 + 3 + \cdots + n = \frac{n(n+1)}{2}$ for any positive integer n . Find a formula for the related sum

$$1 + (1 + 2) + (1 + 2 + 3) + \cdots + (1 + 2 + 3 + \cdots + n)$$

As always, show your work, fully explain and justify your answer.

Posting Date 1/13/13. Submit solutions to Noah Aydin, Mathematics Department, RBH 319 (e-mail or hard-copy, but hard copy submissions must include a time stamp) by 4 pm on 1/25/13.