Problem 2: A Recursively Defined Function

A function f is defined recursively on positive integers as follows.

$$f(1) = 2017$$

and

$$f(1) + f(2) + \cdots + f(n) = n^2 f(n) \text{ for all } n > 1.$$

Find the exact value of $f(2017)$.

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

Posting Date 1/27/2017. 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 2/9/17.