Problem of the Week #6
11/2/2020 to 11/15/2020

A function $f$ is defined for all positive integers and satisfies

\[ f(1) = 2020 \]

and

\[ f(1) + f(2) + \cdots + f(n) = n^2 f(n). \]

Calculate the exact value of $f(2020)$.

Solutions to the last problem were submitted by Suliko Bolkvadze (Georgia, the country), Phil Boyd (Manchester, England), Matthew A. Brom (Troy, NY), M.V. Channakeshava (India), Adam Cordeiro (TU), Quentin Funk (TU alum), Soham Ghosh (India), Rob Hill (Gambrills, Maryland), Kipp Johnson (Beaverton, OR), Hari Kishan (India), Tengiz Kutchava (Georgia, the country), Yann Michel (Paris, France), Surajit Rajagopal (India), Luciano Santos (Portugal), François Seguin (Amiens, France), A. Teitelman (Israel), and Zurab Zakaradze (Georgia, the country).

Solutions for this problem can be submitted to Dr. Brian Miceli at bmiceli@trinity.edu. People who submit solutions will be acknowledged on the next problem. If you like these problems, you may be interested in the Putnam Exam, and more information on the Putnam Exam may be found [HERE](https://www.math.cmu.edu/~pvoight/putnam.pdf).