1060-00-65

Huizeng Qin (qinhz@hotmail.com), Institute of Mathematics, Shandong University of Technology, Zibo, Shandong, Peoples Rep of China, and Youmin Lu\* (ylu@bloomu.edu), Department of Mathematics and Computer Scienc, Bloomsburg University, Bloomsburg, PA 17821. Euler's Constant and Integrals of Fractional Parts.

In this paper, we calculate the values of the integrals  $\int_0^1 \{\frac{1}{x}\}^m dx$ ,  $\int_{0 \le x,y \le 1} \{\frac{1}{x+y}\}^m dx dy$ ,  $\int_{0 \le x,y,z \le 1} \{\frac{1}{x+y+z}\}^m dx dy dz$  and

 $\int_0^1 \{\frac{1}{x}\}^m \{\frac{1}{1-x}\}^n dx$ , where m and n are positive integers and  $\{u\}$  is the fractional part of u, and express their values in terms of Euler's constant and Riemann-Zeta function. We also obtained a set of identities involving the Bernoulli and Harmonic numbers. (Received March 18, 2010)