PROBLEM OF THE MONTH #1

SEPTEMBER 2015

Open to all students whose mathematics classes come solely from the following list: Math 92, Math 105, Math 151, Math 161, Math 162, Math 163, Math 165, Math 177, Math 287, Math 185, Math 241, or Math 277 or their equivalent.

Directions: Write a complete solution to the problem below showing all work. Your paper must have your name, W#, and Southeastern email address. Solutions are to be placed in the envelope for Problem #1 located in the Department of Mathematics Office, Fayard 308 by 4:30 p.m., **Wednesday, September 30**. No late papers will be accepted.

All papers with a correct solution will be entered in a drawing for a great prize!

Questions concerning the problem of the month should be sent to either Dr. Tilak de Alwis (tdealwis@selu.edu), or Dr. Randy Wills (rwills@selu.edu)

Problem: Let $a > 0$ be a real number.

(a) Find the exact value of a such that $a + \frac{1}{a} = 7$.

(b) Find the exact value of $a^2 + \frac{1}{a^2}$, given that $a + \frac{1}{a} = 14$.