PROBLEM OF THE MONTH #1

NOVEMBER 2018

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., **Thursday, November 29**. 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), Dr. Randy Wills (rwills@selu.edu) or Dr. Dennis Merino (dmerino@selu.edu)

PROBLEM: Special Dates!

The 21st century runs from January 1, 2001 to December 31, 2100. We can represent dates in the 21st century using the normal convention $mm/dd/yy$, where $yy = 00$ corresponds to the year 2100. For example, 05/14/62 corresponds to the date May 14, 2062.

For the years 2001 through 2099, we call a date special if $(mm)(dd) = yy$. For the year 2100, we call a date special if $(mm)(dd) = 100$. So, for example, 05/14/62 is not special since $(05)(14) = 70 \neq 62$. On the other hand, 12/03/36 is special since $(12)(03) = 36$. As another example, note that 04/25/00 is special since $(04)(25) = 100$.

How many special dates are there in the 21st century? Show all your work.