

# PROBLEM OF THE MONTH #1

**APRIL 2019**

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, May 9**. 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](mailto:tdealwis@selu.edu)), or Dr. Dennis Merino ([dmerino@selu.edu](mailto:dmerino@selu.edu))

## **PROBLEM: Fido Racing**

Pat, Shannon, and Fido (their dog) are on a circular path 100 feet around. Fido is very excited! Shannon starts walking around the path maintaining a speed of 1 foot per second, while Pat stays still. Fido begins racing back and forth between Pat and Shannon on the circular path along the section of the path Shannon has NOT walked on. What is Fido's average speed if he has returned to Pat for the 5<sup>th</sup> time when Shannon gets to the halfway point? Assume Fido maintains a constant speed of 3 feet per second for his last run back to Pat. Also assume that Fido met Shannon at equally spaced moments in time (include the starting).