

Boise State University, Department of Mathematics

April 2017

MATH PROBLEM SOLVING COMPETITION

(Problems provided by the Editor of the Problem Solving Competition, ASM)

Top Average

Find the value of a that maximizes the average value of the function $f(x) = x^3 - 2x^2 - x + 2$ over the interval $[-1, a]$ for $-1 \leq a \leq 2$.

Going Dotty

Suppose 5 dots all start moving with constant speed 5 meters per second along the same horizontal line, and, whenever two dots meet, those two instantly switch directions. If the two end dots initially move toward each other and if the last change of direction is 10 seconds later, what is the average initial separation for consecutive dots

**Drop your solutions in the Department's Office
before May 5, Attn: Uwe Kaiser**

Be the month's winner and get a certificate!