

Problems ♠–2

Due in DSC 235 by 12 noon, Friday, January 26, 2018

Problem A: Five professors attended a lecture. Each fell asleep just twice. For each pair there was a moment when both were asleep. Show that there was a moment when three of them were asleep.

Problem B: A license plate has six digits from 0 to 9 and may have leading zeros. If two plates must always differ in at least two places, what is the largest number of plates that is possible?

RULES:

- The competition is open to all *undergraduate* UNO students.
- The problems are selected and graded by the POW Committee consisting of Professors Andrzej Rosłanowski and Vyacheslav V. Rykov. However, please always submit your solutions to Andrzej Rosłanowski in DSC 235 or to his mailbox. (Needless to say, they should be written clearly and legibly.)
- The winners of Spring 2018 edition of POW will be determined at the end of the semester based on the number of correct solutions submitted.
- Problems will be posted by Friday 5pm and the solutions are due by the following Friday 12 noon.

PRIZES:

- Cash rewards for the winners of 1st, 2nd and 3rd place are \$400, \$200 and \$100, respectively. In the case of multiple persons receiving the same score the prizes will be suitably divided by the Committee.
- Everybody scoring in the POW Competition will be allowed to participate in the grand finale:
 $\frac{\pi}{2}$ *Mathematical Competition*.
The grand finale will take place on Saturday, April 21, 2018 with grand prizes of \$300, \$400, and \$600.