

Problem of the month
December 2010

We are pleased to inform that Claudia Laguna wrote the best* solution for the November 2010 Problem of the Month. We anticipate to see a better response to this month's problem.

You will have until **December 17th** to solve the problem below. Solutions can be either

1. written neatly on a sheet of paper and dropped in the mailbox outside PB 352, or
2. typed up using your favorite text editing software (L^AT_EX preferred) and then turned in via email at either asabuwala@csufresno.edu or ovega@csufresno.edu.

At the end of the month, we will review all your solutions and post the names of the individuals who have turned in complete correct solutions, and who wrote the best* solution.

Bragging rights winners, solutions, past (and future) problems of the month, etc can be found on

[http : //csufresno.edu/math/news_and_events/pom.shtml](http://csufresno.edu/math/news_and_events/pom.shtml)

Problem for December 2010.

Show that there is a natural number n such that $n!$ when written in decimal notation (that is, base 10) ends exactly in 2010 zeros.

* A solution will be considered better than other in terms of being correct, thoroughness of the explanation, beauty of the idea used, etc.

** Exams, quizzes, homework not included. Not valid where voided and with non-participating professors.