

Math Weekly Problem Competition

**Friday, November 15, 2013**

Suppose  $f(x)$  is a function defined on  $[0, 1]$  such that for any real number  $c$ , the equation  $f(x) = c$  has either no solution or exactly two solutions. Prove that  $f(x)$  is NOT continuous. As an extra, optional, challenge: Can you give an example of such a function?

**Join the competition!**

The Department of Applied Mathematics and IIT SIAM Student Chapter is organizing a weekly campus-wide math competition for undergraduate students.

- ▷ Every Friday 3pm, visit <http://math.iit.edu/~weeklyproblem> to view the problem of the week
- ▷ Submit the solution to [weeklyproblem@math.iit.edu](mailto:weeklyproblem@math.iit.edu) by Wednesday 5pm
- ▷ The author(s) of the first correct solution(s) will receive a monetary prize

For more details view the official web site <http://math.iit.edu/~weeklyproblem>.

Become a Math Club member and receive problem notifications by email.

Good Luck! Have fun and enjoy Mathematics!