

---

## Problem of the Week — October 22, 2015

---

There was no correct solution submitted for the last problem, therefore this problem is a double prize problem — the student who submits the first correct and thoroughly-written solution will receive a \$30 gift card to the Kenyon bookstore. More importantly, you will have earned undeniable bragging rights.

---

**PROBLEM:** Suppose  $p$  is a prime bigger than 6. Show that there is some positive integer  $k$  such that  $p^k$  has 01 as its last two digits.

---

Solutions accepted until 4 pm 10/30/15

You must submit complete solutions to Brian Jones (Hayes 303) either via email or hard copy; however, if you submit a hard copy, it must have a time-stamp (i.e. either electronic proof of time printed or a faculty signature verifying the time submitted.)