

# PROBLEM OF THE WEEK 14

Due Wednesday, January 30 at 5:00 pm

**Question.** Let  $a_n = n^2 + 3$  for  $n = 1, 2, 3, \dots$ . Find the largest positive integer  $d$  such that  $d|a_n$  and  $d|a_{n+1}$  for some  $n \in \mathbb{N}$  (i.e.  $d$  divides two consecutive terms of the sequence).

---

- All answers should be clearly explained. Submit it to the Math/Stat Office, AMB 107.
- If your instructor gives you credit for POTW, write his/her name with the class number.
- Contact Bahattin Yildiz with questions: bahattin.yildiz@nau.edu (AMB 134)
- The problems are available online at <https://naumathstat.github.io/problem-of-the-week/>