



MATH PROBLEM OF THE WEEK

Fall 2021

Problem 3

Let $f : \mathbb{Z} \rightarrow \mathbb{Z}$ be a function that satisfies the following conditions:

- (i) $f(f(n)) = n$ for every n .
- (ii) $f(f(n + 2) + 2) = n$ for every n .
- (iii) $f(0) = 1$.

Show that $f(n) = 1 - n$ for every n .

We welcome solutions from everyone. The undergraduate participant from the NMSU main campus with the most correct solutions at the end of the semester will receive an award of \$500.

Solutions must be mathematically rigorous and originally obtained by the participants.

Deadline: Monday, October 11, 10 am

Send solutions to: mathpotw@nmsu.edu

More information at: <https://math.nmsu.edu/activities/math-problem-of-the-week.html>