UNIVERSITY OF WISCONSIN
PLATTEVILLE
DEPARTMENT OF MATHEMATICS

Problem of the Week #1

(Spring 2023)

Let S be the real number written in decimal notation as $0.02040608101214\ldots$. Specifically, $S = \frac{2}{10^2} + \frac{4}{10^4} + \frac{6}{10^6} + \ldots$, with terms overlapping in the decimal form once the numerators have three or more digits.
Write S as a fraction in lowest terms.

[Please fully explain your answer.]

Email solutions to `kwonmi@uwplatt.edu` by 2:00pm on Wednesday, February 1, 2023.

Every week, the best solution submitted earns a $10 Platteville gift certificate; the top scorer each semester also wins a cash award. Good luck!
You can always see the Problem of the Week (and complete rules) online at:

`http://uwpmath.weebly.com/`