PROBLEM OF THE WEEK #10
(Spring 2022)

Let $x = \dfrac{1}{n} + \dfrac{1}{n+1} + \dfrac{1}{n+2}$, where n is a positive integer. Since x is a rational number, it has a repeating or terminating decimal form. Show that x has a repeating (non-terminating) decimal, but the repeating part doesn't start immediately after the decimal point.

For example, when $n = 4$, we get $x = \frac{37}{60} = 0.616666\ldots$, in which the "61" that follows the decimal point doesn't repeat.

[Please fully explain your answer.]

Email solutions to `kwonmi@uwplatt.edu` by 2:00pm on Wednesday, April 13, 2022.

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: