



PROBLEM OF THE WEEK #8
(Fall 2018)

A *palindrome* is a natural number that doesn't change when the order of its digits is reversed. For example:

- 168861 is a palindrome in base ten.
- $51 = 110011_2$ is a binary palindrome, but is not a palindrome in base ten.
- 0 is a palindrome in every base.

Write 2018 as a sum of three palindromes, and then write $2018 = 11111100010_2$ as a sum of three binary palindromes.

[Please fully explain your answer.]

Solutions should be submitted to Cinda Furry, in Gardner Hall 435, by 4:00 P.M. on Wednesday, November 7, 2018.

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/>