



UNIVERSITY OF WISCONSIN
PLATTEVILLE
DEPARTMENT OF MATHEMATICS

PROBLEM OF THE WEEK #8
(Spring 2019)

When L is a list of distinct terms, a *permutation* of L is a list of the same length with the same terms.

For example, 314265 is a permutation of 123456 with the property that none of the first 4 terms is greater than 4.

Find the number of permutations of 123456 such that for each k with $1 \leq k < 6$, at least one of the first k terms of the permutation is greater than k .

[Please fully explain your answer.]

Solutions should be submitted to Cinda Furry, in Gardner Hall 435, by 4:00 P.M. on Wednesday, March 27, 2019.

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/>