



UNIVERSITY OF WISCONSIN  
**PLATTEVILLE**  
DEPARTMENT OF MATHEMATICS

PROBLEM OF THE WEEK #4  
(Fall 2019)

How many ordered pairs of integers  $(a, b)$  with  $2 \leq a \leq 2019$  and  $2 \leq b \leq 2019$  have the property that  $\log_a b + 6 \log_b a = 5$ ?

[Please fully explain your answer.]

Solutions should be submitted to Cinda Furry, in Gardner Hall 435, by 4:00 P.M. on Wednesday, October 16, 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/>