



PROBLEM OF THE WEEK #9
(Fall 2018)

Write as small a positive real number as you can. The smallest positive real number wins! You may use any standard mathematical notation, but *you may not use more than five characters*. The grader is the final judge of how many characters you used. Ambiguous answers will be disqualified.

Examples:

- “ $\frac{1}{999}$ ” is written with exactly five characters, counting the fraction bar.
- “0.001” is written with exactly five characters, counting the decimal point, and is less than $\frac{1}{999}$.
- “.0001” is written with exactly five characters, counting the decimal point, and is less than 0.001.
- “sin 710” is disqualified for using six characters, counting sin as three.
- “ln ln 2” is disqualified for not being positive.
- “ \hbar ” is disqualified for not being standard *mathematical* notation.
- “ ε ” is disqualified for being ambiguous.
- “ $0.\bar{0}1$ ” is disqualified for not being a real number.

[Please fully explain your answer.]

Solutions should be submitted to Cinda Furry, in Gardner Hall 435, by 4:00 P.M. on Wednesday, November 14, 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/>