

Week #5 Fall 2023

Problem of the Week



Hank needs sugar for a oil, but the recipe states that he is to put one gallon of oil into a bowl, then remove $\frac{1}{2}$ a gallon from the oil that is now in the bowl, he is then to add $\frac{1}{3}$ of a gallon of oil, followed by removing $\frac{1}{4}$ of a gallon of oil, adding $\frac{1}{5}$ of a gallon of oil, and removing $\frac{1}{6}$ of a gallon of oil,... forever. Unable to figure out exactly how much oil he needs, Hank decides to purchase the largest amount of oil that will ever be in the bowl. What is this largest amount?

Undergraduates may submit solutions to the Mathematics Department office, 1150 FAB **or** by email to mathpow@wayne.edu by noon 10/31/2023. Include your name, ID number, and whether you have completed Math 2030 (or higher). For more information go to <https://clas.wayne.edu/math>. Solutions will be posted online and throughout the math department after the deadline.