

1096-P5-2334 **Paul E. Seeburger*** (pseeburger@monroecc.edu), Monroe Community College, 1000 E. Henrietta Rd., Rochester, NY 14623. *Creating Effective Online Homework Problems in Calculus (Using WeBWorK)*. Preliminary report.

WeBWorK provides many ready-made problems that can be used immediately in our courses, including a wonderful selection of graphical and conceptual problems for which students must understand the concepts to obtain correct answers. There are also many problems that only ask students to enter a final numerical answer (e.g., limits, definite integrals, line integrals). Unfortunately, many students are tempted to use their calculators (or Wolfram Alpha) to directly calculate these results. Even the best students sometimes take this approach, worrying about how to work out the problem later (if they find time). I believe we train students to do math problems by the way that we assess them. Problems that only require a numerical (or even symbolic) answer that can be found easily using a calculator or a website train students to use these tools, and may fail to train them to work out the problems in the way that we show them in class and require on exams (showing clear work). Without help, students can also become frustrated in these one-answer problems when their answer is not accepted. I will present some of my attempts to address these issues in problems I have created or adapted using WeBWorK and propose some best practices for creating online homework problems for calculus. (Received September 17, 2013)