Basic Information

This assignment is due on Gradescope by **3:00 PM on Tuesday, March 3**.

Make sure you understand MHC honor code and have carefully read and understood the additional information on the class syllabus. I am happy to discuss any questions or concerns you have!

A major component of this class is helping you understand *why* the mathematics you use works the way it does. To that end, make sure you show all your work as you will be graded on the *process* you use, not just your final answer. And if a question asks you to explain why something is true, be sure to answer that part of the question in complete sentences. Remember, answers without any work will receive 0 points.

The homework problems will be graded anonymously so please do not put your name or other identifying information on the pages.

Turn-In Problems

2.2: 30, 46. For 46, when the book says "algebraically", they mean using the limit definition of the derivative from page 83. (Hint for 46: Adding fractions is

$$\frac{A}{B} + \frac{C}{D} = \frac{AD + BC}{BD}. \text{ Dividing fractions is } \frac{\frac{A}{B}}{C} = \frac{A}{B} \cdot \frac{1}{C} = \frac{A}{BC}).$$

2.3: 2, 4, 8, 16, 26

#8. The following limit represents the derivative of some function f at some number a. Determine such an f and a.

$$\lim_{h \to 0} \frac{\sqrt{4 + h} - 2}{h}$$

Additional Problems (to do on your own, not to turn in)

2.2: 31, 45
2.3: 1, 5, 9, 17, 27