MATH 203 Calculus III
Homework 21

Basic Information
This assignment is due on Gradescope by **3 PM on Friday, December 6**.

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!

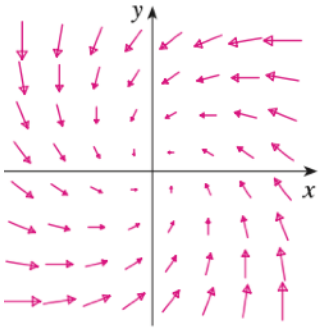
Since this is a 200-level mathematics course, quite a few homework questions will ask you to explain your reasoning or process for solving a problem. Whenever possible, write your explanations in complete sentences and write your answers as if you were explaining to a peer in the class.

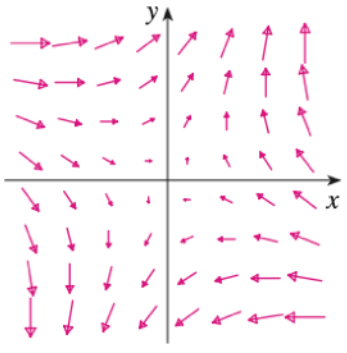
The homework problems will be graded anonymously so please do not put your name or other identifying information on the pages.

Turn In Problems
14.3: 20
14.4: 8, 14
#4 (a) Find a function f such that $\vec{F} = \nabla_f$ when $\vec{F}(x, y) = \langle yz, xz, xy + 2z \rangle$.

(b) Use (a) to evaluate $\int_C \vec{F} \bullet d\vec{r}$ where C is the line segment from $(1, 0, -2)$ to $(4, 6, 3)$.

#5. Below are two vector fields. Determine if they appear to be conservative or not. Be sure to explain your answers.

I. 

II. 

Additional Problems (to do on your own, not to turn in)
14.3: 19
14.4: 7, 13