Basic Information

This assignment is due on Gradescope by **1:30 PM on Friday, March 7**.

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

- 12.3: 30
- 12.5: 22, 30
- 12.6: 8, 14, 20
- #7. Suppose $u = f(w, x)$, and $w = h(r, s, t)$, and $x = p(r, s, t)$, and $r = F(z)$ and $s = G(z)$ and $t = H(z)$. What is the chain rule formula for $\dfrac{du}{dz}$?
- #8. On this Desmos page (**https://www.desmos.com/3d/qu8rqmkv3m**): is a graph with two points on it. One red and at $(x, y) = (2,4)$ and the other orange and at $(x, y) = (4,1)$. For each point, determine the sign of the partial derivatives given below (in other words, say whether the derivative is positive, negative, or 0). You do not need to say what the slope is exactly. **Briefly explain your reasons. You will get no credit if you compute the values below directly from the equation on Desmos.**
  - **(a)** Red point at (2,4): f_x f_{xx} f_{xy}
  - **(b)** Orange point at (4,1): f_x f_y f_{yy}

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

- 12.3: 29
- 12.5: 19, 29
- 12.6: 9, 15, 21