MAT 21A, Fall 2021
Homework 4
Due before 2:10 on Wednesday, October 27

Please write the homework solutions in connected sentences and explain your work. Mark the answers to each question. Scan or take pictures of your homework and upload it to Gradescope before due time.

Find the derivatives of the following functions:

1. $f(r) = re^{-r}$

2. $f(z) = e^z(z - 1)(z^2 + 2)$

3. $\frac{\sin x}{x} + \frac{x}{\sin x}$.

4. Find all points on the graph of $g(x) = \frac{1}{3}x^3 - \frac{3}{2}x^2 + 1$ with tangent lines parallel to the line $y = 4x$.