## Quiz #6, 10/8 Math 156 (Calculus I), Fall 2024

Problem 1 is worth 6 points and Problem 2 is worth 4 points, for a total of 10 points. Remember to *show your work* on all problems!

1. Compute the following derivatives.

(a) 
$$\frac{d}{dx} \left( e^{x^2 + 3x} \right)$$
  
(b)  $\frac{d}{dx} \left( \frac{\sin(x)}{x} \right)$   
(c)  $\frac{d}{dx} \left( \cos^2(5x) \right)$ 

[recall the notation that  $\cos^2(\theta) = (\cos(\theta))^2$ ]

- 2. For each of the following functions f(x), compute the second derivative f''(x).
  - (a)  $f(x) = e^{x^2 + 3x}$
  - (b)  $f(x) = \ln(x)$