Quiz

Directions: Carefully read each question below and answer to the best of your ability in the space provided. You **MUST** show your work to receive full credit!

Find the derivative of each of the following functions:

1. (5 points)

$$f(x) = 4x^2e^x$$

Solution: Notice that we have a product of two function $4x^2$ and e^x, therefore, we would have to use product rule to take this derivative. So we get

$$\begin{aligned} f'(x) &= 4(2xe^x + x^2e^x) \\ &= 4xe^x(2 + x). \end{aligned}$$

2. (5 points)

$$g(x) = \ln(x^3 - 5)$$

Solution: This time, we have a function function $x^3 - 5$ sitting inside the function $\ln(x)$, thus we need to use chain rule to take the derivative of $g(x)$. That is

$$\begin{aligned} g'(x) &= \frac{1}{x^3 - 5} \cdot (3x^2) \\ &= \frac{3x^2}{x^3 - 5}. \end{aligned}$$

Name: _____

Section (circle one): 021 022 023 024

Question:	1	2	Total
Points:	5	5	10
Score:			