## Math 176 Quiz 8 Version A

1. Fill in the blanks in the following derivative rules:

$$
\begin{aligned}
& \frac{d}{d x} x^{n}=\square \frac{d}{d x} e^{x}=\square \quad \frac{d}{d x} \ln x=\square \\
& \frac{d}{d x} b^{x}=\square \frac{d}{d x} \log _{b}(x)=\square \\
& \frac{d}{d x}(f+g)(x)=\square \\
& \frac{d}{d x}(f g)(x)=\square \\
& \frac{d}{d x}(1 / g)(x)=\square \\
& \frac{d}{d x}(f / g)(x)=\square \\
& \frac{d}{d x}(f \circ g)(x)=\square \\
& \frac{d}{d x}(f(f)(x)=\square
\end{aligned}
$$

2. Find the derivative $\frac{d}{d x} \ln \left(5+x^{2} e^{x}\right)$.
