Name:

1. Find the derivative of the function

$$
f(x)=\frac{\ln (x)}{x}
$$

2. Use logarithmic differentiation to find the derivative of the function

$$
f(x)=x^{x+3}
$$

3. Polonium- 210 has a half life of 140 days. What percent of a sample of polonium- 210 will remain after one year?
