MTH 161, Quiz #10, Fall 2024 Name_____

Instructions: Show all work. Use exact answers unless specifically asked to round. Answer all parts of each question.

1. Expand the expression $\log\left(\frac{\sqrt[4]{x}y^4}{z^5}\right)$ as much as possible.

2. Combine the expression $\frac{1}{2}[5\ln(x+6) - \ln x - \ln(x^2-25)]$ into a single logarithmic expression.

3. Use an appropriate change of base formula to approximate $\log_{\frac{1}{4}}(10)$ in your calculator.

4. Use a change of base formula to sketch the graph of $f(x) = \log_3(4x-11)+1$.