

Pg. 207, #42

$$\text{Simplify: } \ln(8e^3) = \ln 8 + \ln e^3 = \boxed{\ln 8 + 3}$$

Pg. 207, #62

$$\begin{aligned} \text{Expand: } \ln \left[ \frac{x}{\sqrt{x^2+1}} \right] &= \ln x - \ln (x^2+1)^{1/2} \\ &= \boxed{\ln x - \frac{1}{2} \ln(x^2+1)} \end{aligned}$$

Pg. 208, #78

$$\begin{aligned} \text{Condense: } \ln x - 2 \ln(x+2) &= \ln x - \ln (x+2)^2 \\ &= \boxed{\ln \left[ \frac{x}{(x+2)^2} \right]} \end{aligned}$$

Pg. 208, #102

$$\text{Evaluate: } \ln \sqrt[5]{e^3} = \ln e^{3/5} = \boxed{\frac{3}{5}}$$