155 **a.** $\ln(e^3) = 3 \ln(e) = 3 \times 1 = 3.$

b. $\ln(e^{-2}) - \ln(e) = -2 \ln(e) - 1 = -2 \times 1 - 1 = -2 - 1 = -3.$

c. $\ln\left(\dfrac{\sqrt{e}}{e^{-1}}\right) = \ln(\sqrt{e}) - \ln(e^{-1}) = \dfrac{1}{2} \ln(e) - (-1) \ln(e) = \dfrac{1}{2} \times 1 - (-1) \times 1 \;\; = \dfrac{1}{2} - (-1) = \dfrac{3}{2}.$