**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. 
$$\ln\left(\frac{\sqrt{e}}{e^{-1}}\right) = \ln(\sqrt{e}) - \ln(e^{-1}) = \frac{1}{2}\ln(e) - (-1)\ln(e) = \frac{1}{2} \times 1 - (-1) \times 1 = \frac{1}{2} - (-1) = \frac{3}{2}$$
.