1. Evaluate: \( \int_{e^2}^{e} \frac{dx}{x \ln x} \).

2. Find the area of the region bounded by the graphs of the equations \( x = y^2 \) and \( 2y^2 = x + 4 \).
1. Evaluate: \[ \int_1^8 (x^{1/3} - x^{-1/3}) \, dx. \]

2. Find the area between the curves \( 2y = 4x - x^2 \) and \( 2y = x - 4 \).
1. Evaluate: \( \int_{-3}^{1} 9|x| \, dx \).

2. Find the area between the curves \( x = y^2 + 2 \) and \( x = 8 \).