1. The function $f(x) = \frac{2x - 3}{x + 4}$ is both one-to-one and onto. Find $f^{-1}(x)$, and state the domain and range of $f(x)$.

2. Show that $f(x) = (x - 2)^2$, where $x \geq 2$, and $g(x) = \sqrt{x} + 2$ are inverses of one another.

3. Solve $9^{2x} \cdot 27^{x^2} = 3^{-1}$.

4. Sketch the graph of $f(x) = \begin{cases} -e^x & \text{if } x < 0 \\ -e^{-x} & \text{if } 0 \leq x \end{cases}$.