(1)[4 points] Let $f(x) = \dfrac{x-1}{x+3}$. Find $f^{-1}(x)$ and also state the domain and range of $f^{-1}(x)$.

(2)[4 points] Sketch the graph of $y = 2^x - 2$. Label the y-intercept on your graph.

(3)[**3 points**] Calculate $\log_4 100$, rounding your answer to two decimal places.

(4)[**4 points**] Express as a single logarithm and simplify:

$$\frac{1}{2}\log_a x + 4\log_a y - 3\log_a x$$