1. Find the maximum and minimum values of \( f(x, y, z) = 8x - 4z \) subject to the constraint \( x^2 + 10y^2 + z^2 = 5 \).

2. Find the extreme values of \( f(x, y) = x^2 - y^2 \) on the region \( x^2 + y^2 \leq 1 \).