Algorithm 1 Gradient descent

procedure GRADIENTDESCENT(f, p_0, γ)   ▷ Descend on f starting at p_0 with step size $\gamma > 0$
    repeat
        $p_{n+1} \leftarrow \exp_{p_n}(-\gamma \operatorname{grad} f(p_n))$
        $n \leftarrow n + 1$
    until Converged
    return p_n
end procedure