FY3403 Particle physics
Problemset 8 fall 2024

Problem 1. Decay rate for Z^0

a) Calculate the decay rate for $Z^0 \to f + \bar{f}$ where f is any quark or lepton. You may assume that the mass of f can be neglected compared to m_Z.

b) Assume that these are the dominant decay modes and find a numerical value for the branching ratio for each type of lepton.