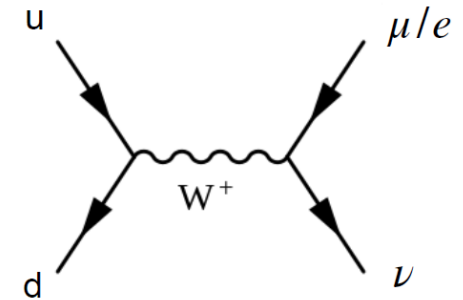


Warm-up question 1

The pion can decay in two ways into leptons.
Which statements are correct?

$$\pi^+ = \mu^+ + \nu_\mu$$

$$\pi^+ = e^+ + \nu_e$$



- A) The positron channel is much more likely because of helicity suppression.
- B) The massive anti-lepton (e^+/μ^+) that is produced must be right-chiral.
- C) The neutrinos in the final state will for sure be left-chiral.
- D) The helicity of the produced e^+/μ^+ must be $h=+1$.
- E) The weak W bosons couple only to particles with helicity $h=-1$.

Warm-up question 2

Which statement about symmetries is correct?

- A) The spin changes its direction under the parity transformation.
- B) The CP symmetry is maximally violated in the weak interaction.
- C) Parity violation can be observed, but is not part of the Standard Model.
- D) So far there is no experimental indication at all for a violation of the CPT symmetry.