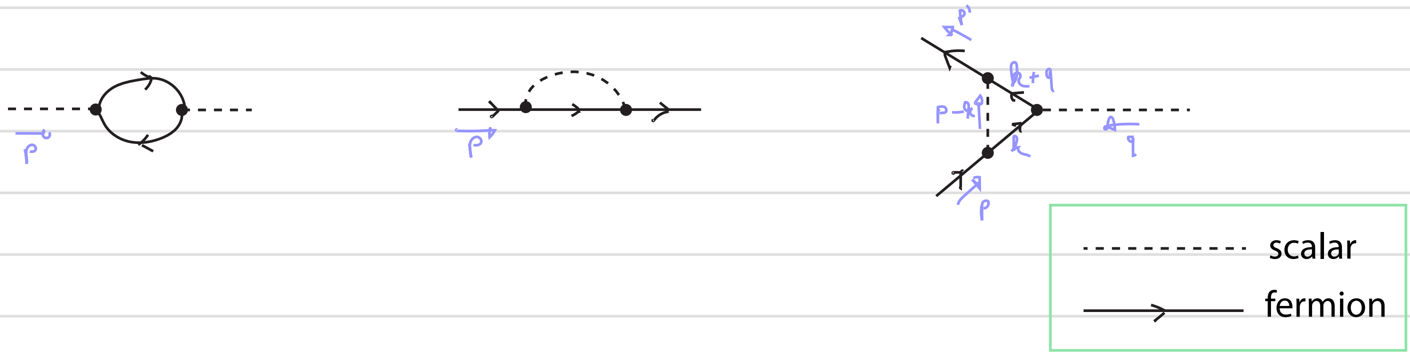
1 Again, we consider the Lagrangian:

$$\mathcal{L} = \frac{1}{2}(\partial_\mu\phi)^2 - \frac{1}{2}m_\phi^2\phi^2 + \bar\psi(i\not\partial - m_e)\psi - ig\,\bar\psi\gamma^5\psi\phi +$$
$$+\frac{1}{2}\delta_3(\partial_\mu\phi)^2 - \frac{1}{2}\delta m_\phi\,\phi^2 + \bar\psi(i\delta_2\not\partial - \delta m_e)\psi - ig\,\delta_1\bar\psi\gamma^5\psi\phi$$

Calculate the integrals for the loops below in Dim. Reg.* (no need to integrate the Feynman parameters everywhere - although it can be useful to do it in the divergent pieces, where it is easy)



* γ_5 matrices can be tricky as far as Dim. Reg. in concerned. For now use the "Naive Dimensional Regularization" (NDR) scheme, which means the usual relations for γ_5:

$$\{\gamma_5, \gamma_\mu\} = 0 \qquad \forall\mu$$

$$\mathrm{Tr}[\gamma_5\gamma_\mu\gamma_\nu\gamma_\rho\gamma_\alpha] = 4\epsilon_{\mu\nu\rho\alpha}$$

we will come back to this point when we deal with anomalies (if you are really curious, check out Peskin page 662 - he explains the HV ('t Hooft and Veltman) scheme there)