1. Consider a real scalar field ϕ with interaction Lagrangian $\mathscr{L}_{\text{int}} = \frac{\mu}{3!}\phi^3$. What is the mass dimension of μ? Evaluate the leading μ-dependent contributions to

$$\langle 0|T\Big(\phi_I(x)\phi_I(y)\,\exp\Big[i\int d^4z\,\mathscr{L}_I(z)\Big]\Big)|0\rangle$$

in terms of the Feynman propagator D_F. Draw the relevant Feynman diagrams.