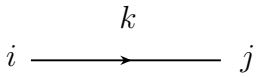
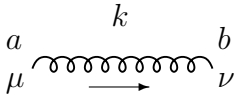
Feynman Rules for QCD

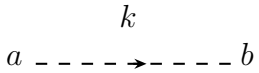
Propagators:



$$i\,\delta_{ij}\frac{(\not{k}+m)}{k^2-m^2+i\epsilon}$$



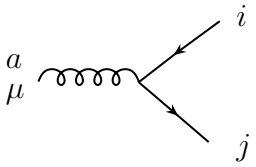
$$\frac{-i\,\delta_{ab}}{k^2+i\epsilon}\left[g_{\mu\nu}-(1-\eta)\frac{k_\mu k_\nu}{k^2}\right]$$



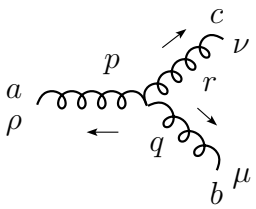
$$\frac{-i\,\delta_{ab}}{k^2+i\epsilon}\,,$$

η fixes the gauge: $\eta = \begin{cases} 1, & \text{Feynman gauge} \\ 0, & \text{Landau gauge} \end{cases}$

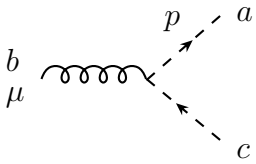
Vertices:



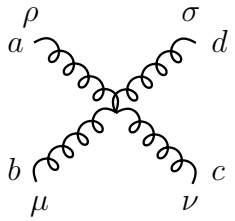
$$ig_s\gamma_\mu T^a_{ji}$$



$$-g_s f^{abc}\left[(p-q)_\nu\, g_{\rho\mu}+(q-r)_\rho\, g_{\mu\nu}+(r-p)_\mu\, g_{\nu\rho}\right]$$



$$g_s\, f^{abc} p_\mu \text{ (p_μ outgoing)}$$



$$-ig_s^2 f^{abe} f^{cde}\,(g_{\rho\nu}g_{\mu\sigma}-g_{\rho\sigma}g_{\mu\nu})$$
$$-ig_s^2 f^{ace} f^{bde}\,(g_{\rho\mu}g_{\nu\sigma}-g_{\rho\sigma}g_{\mu\nu})$$
$$-ig_s^2 f^{ade} f^{cbe}\,(g_{\rho\nu}g_{\mu\sigma}-g_{\rho\mu}g_{\sigma\nu})$$

Four-momentum conservation is fulfilled at each vertex.