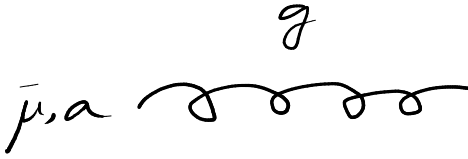
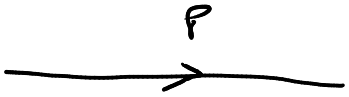
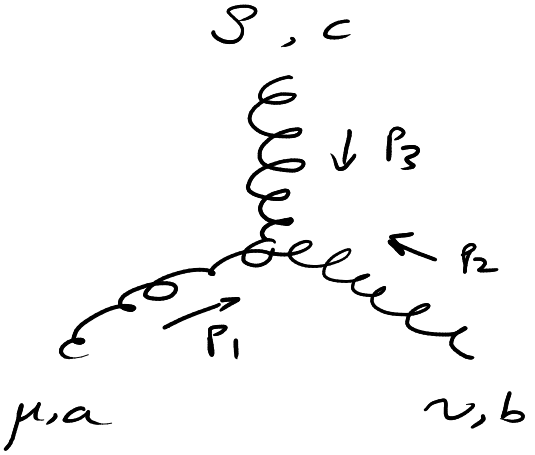


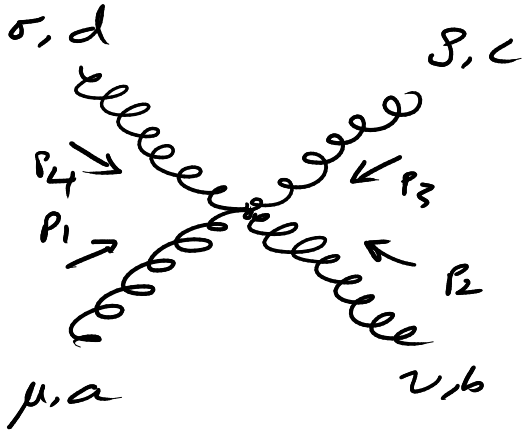
$$= -i\delta^{ab}\left[\frac{g_{\mu\nu}}{k^2+i\varepsilon} - (1-\xi)\frac{k_\mu k_\nu}{(k^2)^2}\right]$$



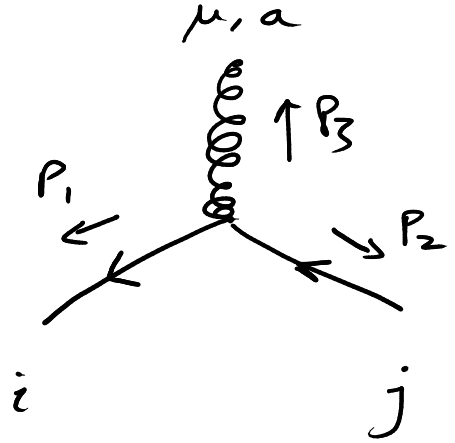
$$= \frac{i(\not{p} + m_f)}{p^2 - m_f^2 + i\varepsilon}$$



$$= -g_s f^{abc}\left[g^{\mu\nu}(p_1 - p_2)^\sigma + g^{\nu\sigma}(p_2 - p_3)^\mu + g^{\sigma\mu}(p_3 - p_1)^\nu\right]$$



$$= -ig_s^2\left[f^{eab}f^{ecd}(g_{\mu\rho}g_{\nu\sigma} - g_{\mu\sigma}g_{\nu\rho}) + f^{eac}f^{edb}(g_{\mu\sigma}g_{\rho\nu} - g_{\mu\nu}g_{\rho\sigma}) + f^{ead}f^{ebc}(g_{\mu\nu}g_{\rho\sigma} - g_{\mu\rho}g_{\nu\sigma})\right]$$



$$= -ig_s\gamma^\mu T^a_{ij}$$