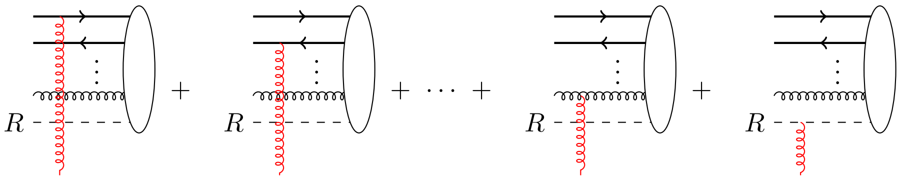
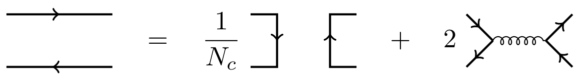
1 Basics

Color conservation. There is **no other** color flowing in/out of the white ellipse, and it can be any contraction you can think of! (Recover the Lie algebra for $q\bar{q}g$ and the Jacobi identity for ggg)



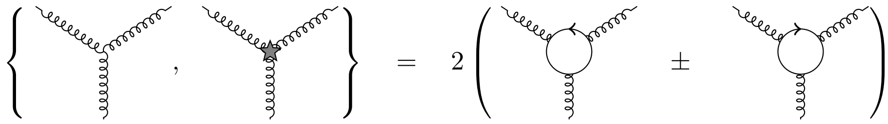
(1)

Fierz identity [rotate it and consider permutations (remember the generator sign convention)]



(2)

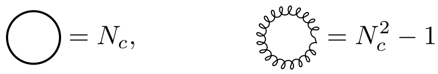
Three gluon vertices (rhs $\pm$ is either the antisymmetric tensor or symmetric tensor)



(3)

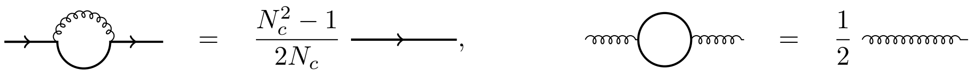
2 Memo for simplifications

Dimensions - Zero point (Trace a Kronecker delta in either fundamental or adjoint irreps)

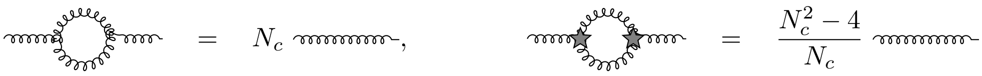


(4)

Two points

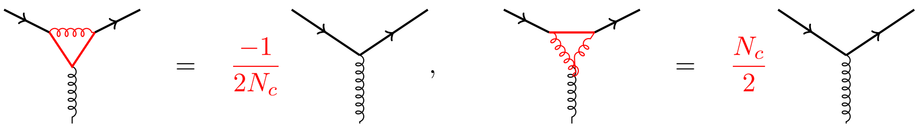


(5)

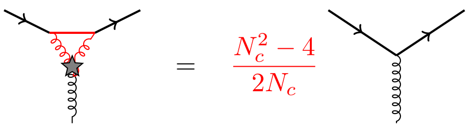


(6)

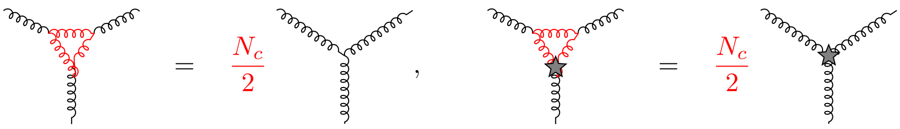
Three points



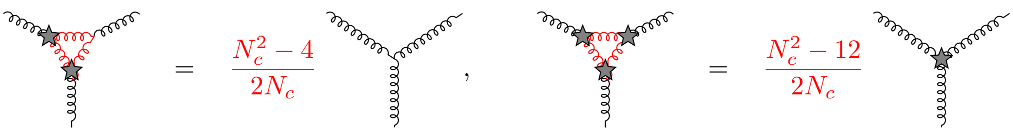
(7)



(8)

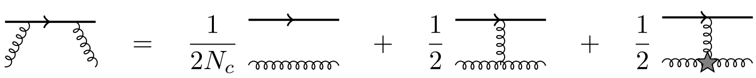


(9)



(10)

A nice relation with four points



(11)