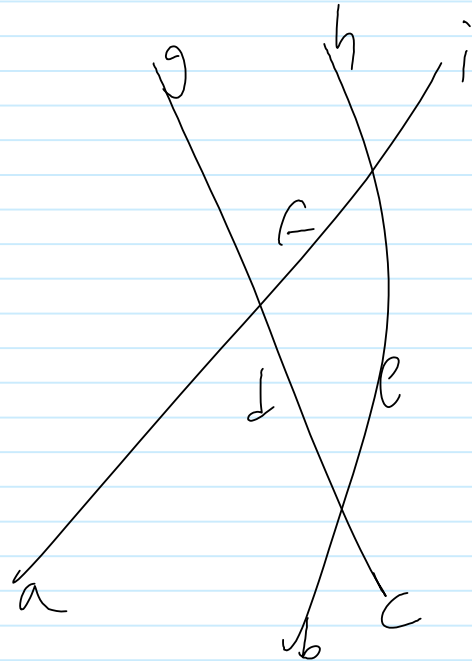
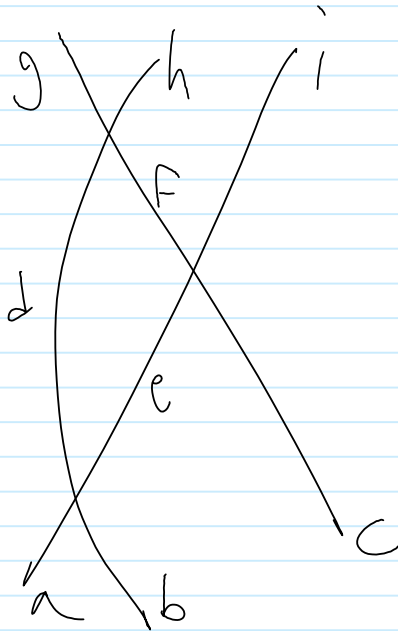


# Banff Proposal Recycling

July-20-14 1:50 PM

It is by now well known that there is a pairing between finite dimensional representations of semi-simple Lie algebras and knots. Namely, for every one of the latter (e.g.  $\mathfrak{sl}_2$  and its defining representation) there is an invariant of knots (the celebrated "Jones polynomial", in the example). It is also well known that the said pairing extends on both the topological side, to other realms within low dimensional topology, and on the algebraic side,



$$\sum_{d, e, f} R_{de}^{ab} R_{fi}^{cc} R_{gh}^{df}$$

$$\sum_{d, e, f} R_{de}^{bc} R_{gf}^{ad} R_{hi}^{fe}$$