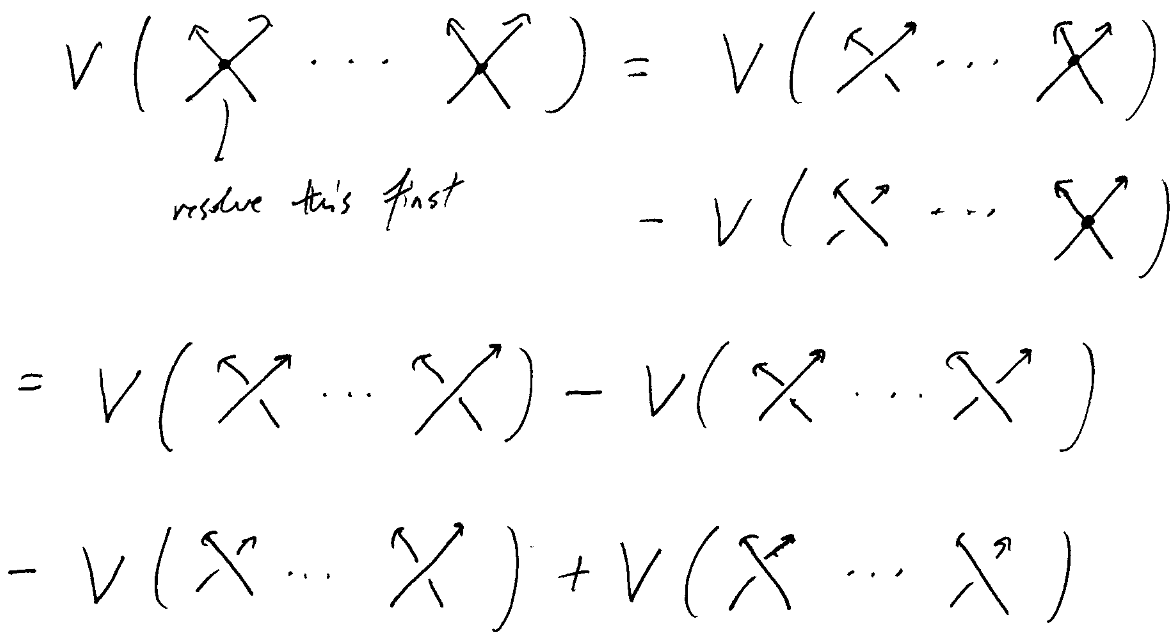
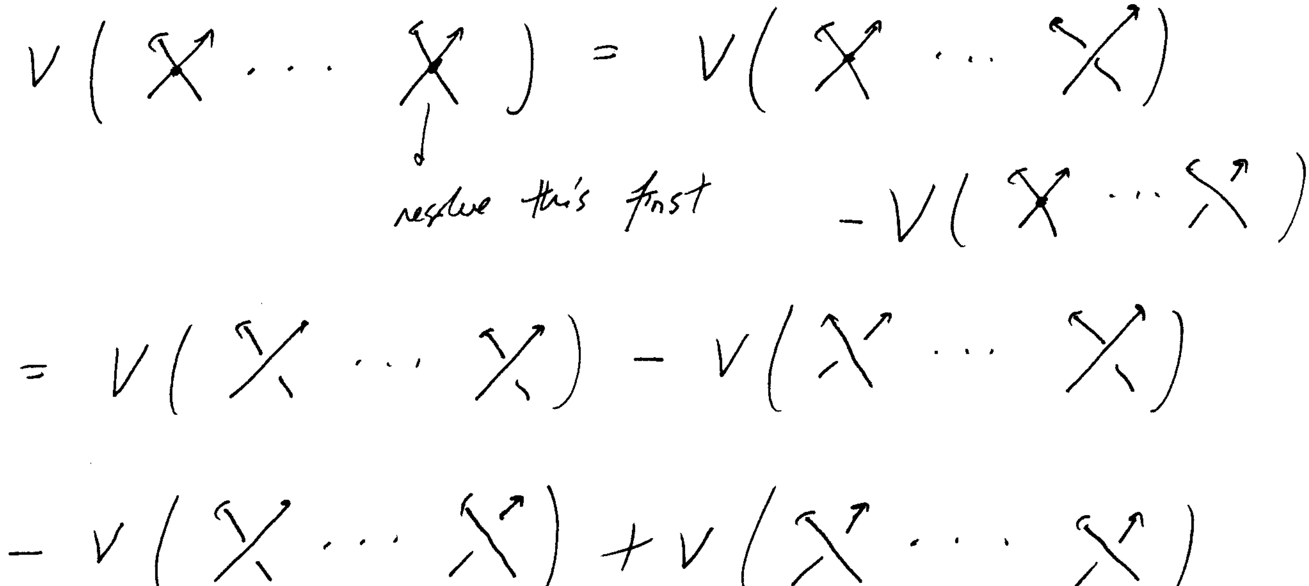
1) Show that the Vassiliev skein relation is well-defined with respect to the order of crossings resolved:



On the other hand,



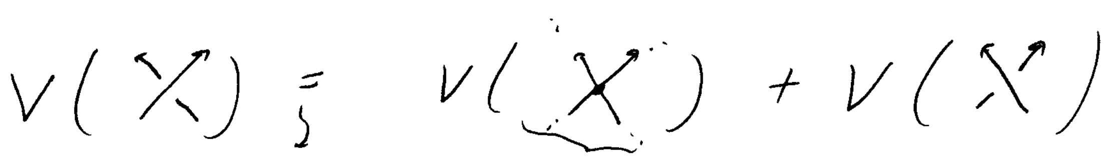
But the four terms are the same, with same signs.

Since the order in which 2 singularities are resolved doesn't matter, by induction the order in which n singularities are resolved does not matter.

2. Show only type 1 invariants are constant functions ~~on~~ K.

V type 1 $\Rightarrow$ value of V on an 1-singular knot only depends on the placement of singularity. *

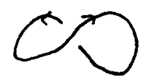
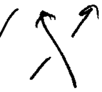
So

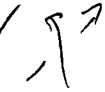


vassiliev skein rel'n

some 1-singular knot

choose a particular 1-singular knot since V doesn't see the difference by *

$= v($  $) - v($  $) + v($  $)$

$= v($  $) - v($  $) + v($  $)$

unknots

$= v($  $)$

Since v(knot) = v(knot w/ crossing changed),

v = constant.

(same as proof in class that only type 0 invariants are constant)