

These exercises are mainly taken from the last week's lectures. Please let me know if any of the problems are unclear or have typos.

Exercise 10.1. [Harder] Prove that any knot K has ∇_K being a polynomial in z^2 . Here ∇_K is the Conway polynomial of K .

Exercise 10.2. Compute the Conway polynomial of the trefoil, figure eight knot, and the Whitehead link.

Exercise 10.3. Show that the Conway polynomial does not distinguish mirror image knots. Does it distinguish mirror image links?

Exercise 10.4. Give formulas for P_{mK} and P_{rK} in terms of P_K , the HOMFLY polynomial of K .