Homework Assignment 3

Problem. Make sense of the paragraph below and add enough details to make it intelligible.

> If p is a prime, $G = D_{2p}$ is the dihedral group with $2p$ elements, Z is the knot invariant associated with WG, and K is a knot with n crossings, then $Z(K)$ is computable in time polynomial in n. Indeed only one of the conjugacy classes of G is interesting (call it C), and finding homomorphisms $\pi_1(K) \to G$ that map meridians to C amounts to solving systems of linear equations over the field $\mathbb{Z}/p$.

(In particular, we made fools of ourselves in class struggling to compute Z for $G = S_3 = D_6$).