

Math 336 HW #9
Due 5:00 PM Tuesday, April 20

Presentations:

1. Suppose K_1, K_2 are knots in \mathbb{R}^3 . Show that $g(K_1 \# K_2) \leq g(K_1) + g(K_2)$.

Problems:

1. Prove that the genus of the Whitehead double of any knot K is 1.
2. Prove that the genus of the torus knot $T(p, q)$ is bounded above by $\frac{1}{2}(p-1)(q-1)$.
3. Prove that the n -fold cyclic cover \tilde{X}_n (where X is the complement of the knot K) depends only on n and the knot type of K .
4. Compute the third torsion invariant of the trefoil and the second torsion invariant of the figure 8 knot.