# MATH 495: KNOT THEORY, HOMEWORK 4

THE KAUFFMAN BRACKET AND THE JONES POLYNOMIAL

**Due in class, Thursday, 3/6**

Problems (to turn in).

(1) Calculate $f_D(A)$ for both the left handed and the right handed trefoil.
(2) Find a formula for the Kauffman bracket of a connected sum (i.e. $< K_1 \# K_2 >$) in terms of the Kauffman brackets of the summands (i.e. $< K_1 >$ and $< K_2 >$).
(3) Let $s_+$ be the state that assigns $+1$ to every crossing and let $s_-$ be the state that assigns $-1$ to every crossing. Let $K$ be the knot $8_{19}$ from the knot tables. Draw the resolutions $s_+K$ and $s_-K$. How are these resolutions different from all of the $s_+$ and $s_-$ resolutions of knots that appear before $8_{19}$ in the knot tables?