

**Math 732: Knot Theory**  
**Asst. 7, due Su., 3/20, 10pm**

**Problems to think about, but not submit**

- Cromwell 4.7

**Problems to submit**

You must submit 4 of the following; clearly indicate which ones you want me to grade. You are welcome to submit any others that you want me to provide feedback on.

1. (required) (a) Draw a tubular neighborhood of your knot; indicate a meridian and a preferred longitude on it.  
(b) Draw the untwisted Whitehead double of each of your knots.  
(c) Draw the 3-strand cable of each of your knots.
2. (required) Adams 5.13 (n.b., Adams uses this notation: pattern  $P = K_1$  and companion  $C = K_2$ )
3. Among prime knots (not distinguishing orientation or chirality), there are two 13-crossing satellite knots and two 14-crossing satellite knots. Find them.
4. Show, up to isotopy on  $\partial V$ , that preferred longitudes are unique.
5. Cromwell 4.5
6. Find a polygonal knot isotopic to the trefoil using 6 sticks such that the first three consecutive ones point in mutually orthogonal directions. (cf., Lemma 4.7.1)