

Laura's Pre-REU "Homework" Assignment

This is the assignment I emailed to you before you got to JMU. It covers the very basics of knot theory and knot tricolorization.

1. What do mathematicians mean by a *knot*?
2. What are the *Reidemeister moves*, and why are they important?
3. What does it mean for a knot to be *tricolorable*?
4. Prove that tricolorability is preserved under Reidemeister moves. (There are a lot of cases to consider.) Why is this important?
5. Show that the trefoil knot and the figure-eight knot are different knots, by showing that one is tricolorable and the other isn't.
6. Find a tricolorization of the knot known as 8_5 .
7. Prove that the knot known as 6_2 is not tricolorable.