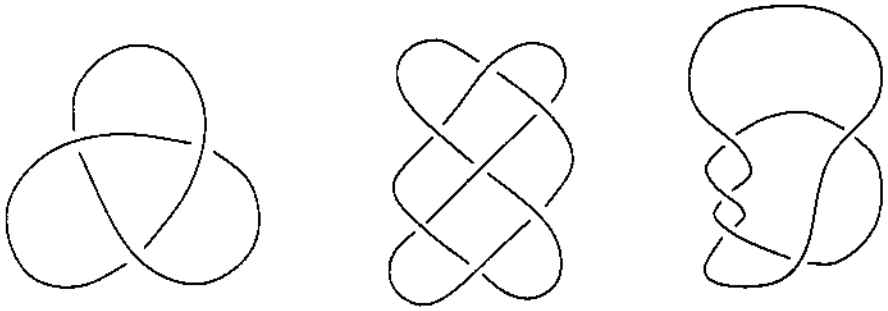
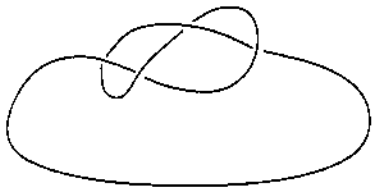
Problem 5. Show that the following knot diagrams can be colored:



Problem 6. Determine whether or not the following knot diagram can be colored:



Problem 7. If a knot diagram is colorable, there are many different ways of coloring it. For example, strands that were colored red can be changed to green, green strands to blue, and blue strands to red. This will be a new coloring. There are 6 permutations of the set of 3 colors, so any coloring yields a total of 6 colorings. For some knots there are more possibilities.

(i) Show that the standard diagram for the right trefoil knot (left picture in problem 3) has exactly 6 colorings.

(ii) How many colorings does the following diagram admit?