Homework for 651

Due Tuesday, March 15, 2007 (Note the later date)

1. Problem 8 on page 131 in Hatcher.

2. Problem 17 on page 132 in Hatcher.

3. Problem 29 on page 132 in Hatcher.

4. Show that $H_1(S^3 - f(S^1)) = \mathbb{Z}$, where $f : S^1 \to S^3$ is a smooth or piecewise-linear embedding. In other words the complement of a smooth knot in the three sphere has the same homology as the trivial unknotted knot.