Math 8062 Homework 9

Due Thursday, 4/21/11

1. Do problem 29 on page 158 of Hatcher.

2. Do problem 42 on page 159 of Hatcher.

3. Let M and N be closed, connected, oriented manifolds of dimension n. Let $M\#N$ be their connected sum. Prove that

$$\tilde{H}_k(M\#N) \cong \tilde{H}_k(M) \oplus \tilde{H}_k(N),$$

for all $k \neq n$. *Hint: be careful when $k = n - 1$!*