

**HOMEWORK 5**

DUE 6 MAY 2016

**Part I.**

1. Let  $S$  be a multiplicatively closed subset of  $R$  and  $M, N$  two  $R$ -modules. Show that

$$S^{-1}(M \otimes_R N) \simeq S^{-1}M \otimes_{S^{-1}R} S^{-1}N.$$

---

**Part II.** From Atiyah-Macdonald**Chapter 2:** 5, 8, 10, 13**Chapter 3:** 1, 2, 3, 12, 13

---

**Bonus.****Atiyah & Macdonald, Chapter 3:** 25, 26