Math 254A. Homework 1

Due Wednesday, 30 August

1. Exercise 5 on page 5.

2. Exercise 1 on page 15.

3. Let A be an entire ring, let K be its field of fractions, and let $L \subseteq M$ be field extensions of K. Let B be the integral closure of A in L, let C be the integral closure of B in M, and let C' be the integral closure of A in M. Show that $C = C'$. (This shows that taking integral closure is transitive in towers of fields.)