1. Problem #5 on page 5.

2. Problem #1 on page 15.

3. Let $A$ be a normal entire ring, let $K$ be its field of fractions, and let $L \subseteq M$ be fields algebraic over $K$. 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.)

4. Let $A \subseteq B$ be commutative rings, with $B$ integral over $A$. Show that $B^* \cap A = A^*$. 