Homework 12, Math 215

1. Prove that the number of quadratic polyomials with integer coefficients is denumerable.

2. Use the first problem to show that the set of numbers of form $r_1 + r_2\sqrt{m}$ where r_1, r_2 are rationals and m is an integer is countable.

   Hint: Think of the quadratic formula.

3. Show that the set of irrational numbers is uncountable.