

MATHEMATICS 3210-2. Homework 3.

September 6, 2000

1. Problem # 6 (c), page 12, from the textbook:
Prove that sum of rational and irrational number is always irrational.
What about the product rational·irrational ? When is it rational and when it is irrational?
2. Problem # 6, parts 1 and 2, page 17, from the textbook:
Using induction prove that:
 - (a) $n < 2^n$,
 - (b) $n^2 \leq 2^n + 1$,for all positive integers $n = 1, 2, 3, \dots$