1.7 Introduction to Proofs

1.7 pg 91 # 11

Prove or disprove that the product of two irrational numbers is irrational.

1.7 pg 91 # 1

Use a direct proof to show that the sum of two odd integers is even.

1.7 pg 91 # 13

Prove that if x is irrational, then $1/x$ is irrational.

1.7 pg 91 # 17

Show that if n is an integer and $n^3 + 5$ is odd, then n is even using

a a proof by contraposition

b a proof by contradiction

1.7 pg 91 # 23

Show that at least ten of any 64 days chosen must fall on the same day of the week.

1.7 pg 91 # 27

Prove that if n is a positive integer, then n is odd if and only if $5n + 6$ is odd.

Supplementary Exercises pg 113 # 39

Prove that if x is irrational and $x \geq 0$, then $\sqrt{x}$ is irrational.