Assignment 2, due Wednesday February 3rd
Section 2.1: 1, 4, 5, 6, 9, 13
Section 2.2: 1, 2, 3, 6, 9

Proof Problem 2:
Rough draft: Friday January 29th
Final draft: Friday, February 5th
Prove that "If $A \subseteq B$ and $B \subseteq C$, then $A \subseteq C$" where A, B, and C are all sets in some universe.

Proof Problem 3:
Rough draft: Wednesday February 10th
Final draft: Monday, February 15th
Prove that $\forall_{x \in \mathbb{Z}}(x \in 2\mathbb{Z} \Rightarrow x^2 \in 2\mathbb{Z})$.

Assignment 3, due Friday February 12rd
Section 1.1 4, 7
Section 1.2 5, 6
Section 1.3 1, 6, 8, 10
Section 1.4 1, 5

Proof Problem 4:
Rough draft: Wednesday February 17th
Final draft: Monday, February 22nd
Prove that for all real $x > 0$, $\frac{|2x-1|}{x+1} \leq 2$.

Assignment 4, due Wednesday 24th
Section 1.5: 3, 6
Section 1.6: 1, 2, 4
Section 1.7: 2, 6
Section 3.1: 2, 4

Friday the 26th
Test 1

Proof Problem 5:
Rough draft: Monday March 7th
Final draft: Friday, March 11th
Prove that for all integers $n \geq 1$:
$$\sum_{m=1}^{n} m^2 = \frac{n(n+1)(2n+1)}{6}$$

Assignment 5, due Wednesday March 9th
Section 2.4 3, 6 parts a, c, e, g, i, and l, 7 parts a, b, d, f, h, i, k, l, and n

Assignment 6, due Wednesday March 16th
Section 2.4 4, 6 parts b, f, i, k, 7 parts c, g, i, m, o, 8 parts a, b, c, d, f, g

Proof Problem 6:
Rough draft: Friday March 18th
Final draft: Wednesday, March 30th
Let S be the set of all bounded functions on $[0,1]$. Give 5 examples of elements of S, so that it's clear you know what S is. Define a relation on S via $f \sim g$ iff

$$\int_0^1 \left(f(x) - g(x)\right) dx = 0$$

Prove that $\sim$ is an equivalence relation.

Proof problem 7
Rough draft: Friday April 15th
Final draft: Wednesday, April 20th
Prove that the function f, defined below, is onto but not one-to-one.

$$f: \mathbb{R}^2 \to \mathbb{R}$$
$$(x, y) \mapsto x^2 + xy$$

Assignment 7, due Monday April 18th
Section 4.1: 1, 2, 7, 11, 12
Section 4.2: 1g, 3, 8, 12
Section 4.3: 1hijkl, 4