Homework 7 - Math 574, Frank Thorne (thornef@mailbox.sc.edu)
Due Monday, March 19 at 5:00.

All homework turned in on time will be returned on Tuesday.

Core:

6.1: 3, 7, 10, 11, 13, 24, 33 (a, b).

For each integer i, let $A_i = (i, i + 1)$ and let $B_i = [i, i + 1]$. Describe the sets $\cup_{i \in \mathbb{Z}} A_i$ and $\cup_{i \in \mathbb{Z}} B_i$.

6.2: 7, 9, 13.

7.2: 5, 6, 9, 17, 18.

Additional:

6.1: 8, 12.

6.2: 8, 10, 14.

7.2: 10, 11, 15, 16.

Bonus:

(1) (2 points) 7.4: 14.
(2) (2 points) Find sets A_i, for each integer $i \geq 1$, such that $\cap_{i \geq 1} A_i = \mathbb{Z}$.
(3) (1,000,000 points) Is there a polynomial $f(x, y)$ in two variables such that f gives a bijection from $\mathbb{Q} \times \mathbb{Q}$ to $\mathbb{Q}$?
    (Mheh heh heh. Good luck.)