Math 3341 **Homework 5** **Spring 2012**

The assignment is due at the beginning of class on March 22, 2012.

Problem 1 (10 points) Exercise 3.2.6.

Problem 2 (10 points) Exercise 3.2.9. (a)

Problem 3 (10 points) Find all limit points of the set

$$\left\{ \frac{1}{m} + \frac{1}{n} \mid m, n \in \mathbb{N} \right\}$$

Remember that $A = B \Leftrightarrow (A \subseteq B) \wedge (B \subseteq A)$.

Problem 4 (10 points) Show: If $X \subseteq \mathbb{R}$ is both open and closed, then $X = \mathbb{R}$ or $X = \emptyset$.

Problem 5 (10 points) Exercise 3.2.14.