

Analysis in  $\mathbb{R}^n$   
Math 203, Section 30  
Autumn Quarter 2007  
Written Exercises from Thursday, November 8

**Exercise 0.0.1** Consider the metric space  $\mathbb{R}^2$  with the usual metric. If  $A = \{(x, \sin x) \mid x \neq 0\}$ , find  $\overline{A}$ .

**Exercise 0.0.2** Let  $X$  be a metric space, and suppose  $A, B \subset X$ . True or False with justification:

*i.*  $\overline{A \cup B} = \overline{A} \cup \overline{B}$ .

*ii.*  $\overline{A \cap B} = \overline{A} \cap \overline{B}$ .