

## Homework 4: Interior and Closure

*Assignments should be **stapled** and written clearly and legibly.*

1. §2.1, #2.1 (a)(b)(c), 2.2(b), 2.4, 2.12.
2. Consider  $\mathbb{R}$  with topology  $\mathcal{T} = \{\emptyset, \mathbb{R}\} \cup \{(a, \infty) : a \in \mathbb{R}\}$ .
  - (a) Give all closed sets of  $(\mathbb{R}, \mathcal{T})$ .
  - (b) Find  $\overline{[4, 8)}$ ,  $\overline{\{3, 15, 22, 64\}}$ ,  $\overline{\{5, 10, 15, 20, \dots\}}$ , and  $\{5, 10, 15, 20, \dots\}^\circ$ .