Homework Sample Template

19.8

- Let A and B be sets.
- For the sake of contradiction assume that $(A - B) \cap (B - A)$ is not empty.
- Therefore there must be an element x where $x \in (A - B)$ and $x \in (B - A)$.
- As a result, $x \in A \wedge \notin B$ and $x \in A \wedge \notin B$ by the definition of set subtraction.
- We have a contradiction, and must therefore conclude that (A-B) $\cap$ (B-A) = $\emptyset$.