Write your name and code on the back.

1. { 6 points } Determine whether each of these statements is true or false. Check the appropriate box:

(a) $\emptyset \in \{\emptyset\}$ □ True □ False

(b) $\emptyset \subset \{0\}$ □ True □ False

(c) $0 \subseteq \{0\}$ □ True □ False

2. { 4 points } Let $A$ and $B$ be sets. Prove that

$$A \cap B = B \cap A$$