Tutorial 4: Sets

1. Let A and B be sets. Prove

$$A \cap B = \emptyset \text{ iff } A \subseteq \bar{B}.$$

2. Let A, B and C be any sets. Show that

$$A \times (B \cup C) = (A \times B) \cup (A \times C).$$

3. Let A and B be sets. Show that

$$\overline{A \cup B} = \overline{A} \cap \overline{B}.$$