

(a) $A \times B = \emptyset \iff (A = \emptyset) \vee (B = \emptyset);$

(b) Si $C \times D \neq \emptyset$:

$$C \times D \subseteq A \times B \iff (C \subseteq A) \wedge (D \subseteq B);$$

(c) $A \times (B \cup C) = (A \times B) \cup (A \times C);$

(d) $A \times (B \cap C) = (A \times B) \cap (A \times C).$