

$$(\overline{A \times B}) \stackrel{?}{=} (\overline{A} \times \overline{B}) \cup (\overline{A} \times B) \cup (A \times \overline{B})$$

Demonstração

$$\text{Suponha } x \in (\overline{A \times B})$$

$$\text{Logo } x \in \overline{A \cup B}$$

$$\text{Portanto } x \in U \setminus A \cup B$$

$$\text{Logo } x \in U \setminus A \cup U \setminus B$$

$$\text{Suponha } x \in (\overline{A} \times \overline{B})$$

$$\text{Portanto } y \in U \setminus A \times U \setminus B$$

$$\text{Logo } y \in U \setminus A \cup U \setminus B$$

$$\text{Logo } (\overline{A \times B}) \subseteq (\overline{A} \times \overline{B}) \cup (\overline{A} \times B) \cup (A \times \overline{B})$$

$$(\overline{A \times B}) \cup (\overline{A} \times B) \cup (A \times \overline{B}) \stackrel{\text{Matrícula: 20470133024}}{\subseteq} (\overline{A \times B})$$

$$\text{Suponha } x \in (\overline{A \times B})$$

~~$$\text{Logo } x \in \overline{A \times B}$$~~

$$\text{Logo } x \in A \times U \setminus B$$

$$\text{Logo } x \in A \cup U \setminus B$$

$$\text{Suponha } y \in (\overline{A \times B})$$

~~$$\text{Logo } y \in \overline{A \times B}$$~~

$$\text{Logo } y \in U \setminus A \times B$$

$$\text{Portanto } y \in U \setminus A \cup B$$

$$\text{Logo } y \in U \setminus A \cup U \setminus B$$

$$\text{Logo } y \notin A$$

$$\text{Logo } (\overline{A \times B}) \cup (\overline{A} \times B) \cup (A \times \overline{B}) \subseteq (\overline{A \times B})$$

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