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$$E_1 = A \cup B$$

$$E_2 = \overline{A \cup B} = \overline{A} \cap \overline{B}$$

$$E_3 = \overline{A \cap B} = \overline{A} \cup \overline{B}$$

$$E_4 = (A \cap \overline{B}) \cup (B \cap \overline{A})$$

$$E_5 = E_3$$

$$E_6 = (A \cap B) \cup (\overline{A} \cap \overline{B})$$

$$E_1 \quad \begin{array}{cc} A & \overline{A} \\ B & \begin{array}{|c|} \hline \text{shaded} \\ \hline \end{array} \\ \overline{B} & \begin{array}{|c|} \hline \text{shaded} \\ \hline \end{array} \end{array}$$

$$E_2 \quad \begin{array}{cc} A & \overline{A} \\ B & \begin{array}{|c|} \hline \\ \hline \end{array} \\ \overline{B} & \begin{array}{|c|} \hline \\ \hline \end{array} \end{array}$$

$$E_3 \quad \begin{array}{cc} A & \overline{A} \\ B & \begin{array}{|c|} \hline \\ \hline \end{array} \\ \overline{B} & \begin{array}{|c|} \hline \text{shaded} \\ \hline \end{array} \end{array}$$

$$E_4 \quad \begin{array}{cc} A & \overline{A} \\ B & \begin{array}{|c|} \hline \\ \hline \end{array} \\ \overline{B} & \begin{array}{|c|} \hline \text{shaded} \\ \hline \end{array} \end{array}$$

$$E_6 \quad \begin{array}{cc} A & \overline{A} \\ B & \begin{array}{|c|} \hline \text{shaded} \\ \hline \end{array} \\ \overline{B} & \begin{array}{|c|} \hline \\ \hline \end{array} \end{array}$$