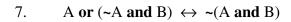
In each of the following exercises use truth tables to determine if the given Boolean expressions are *equivalent* or *not equivalent*.

- 1. A and $(A \text{ or } B) \leftrightarrow A$
- 2. A or (\sim A and B) \leftrightarrow A or B
- 3. A and $(B \text{ or } C) \leftrightarrow (A \text{ and } B) \text{ or } (A \text{ and } C)$
- 4. A or $(B \text{ and } C) \leftrightarrow (A \text{ or } B) \text{ and } (A \text{ or } C)$
- 5. \sim (A and B) $\leftrightarrow \sim$ A or \sim B
- 6. A or $(A \text{ and } B) \leftrightarrow A \text{ and } B$



8. (A or B) and (A and B)
$$\leftrightarrow$$
 (A and B) or (A or B)

9.
$$\sim$$
(A or B or C) \leftrightarrow \sim A and \sim B and \sim C

$$10. \hspace{0.5cm} (A \hspace{0.1cm} \textbf{and} \hspace{0.1cm} B) \hspace{0.1cm} \textbf{and} \hspace{0.1cm} C \hspace{0.1cm} \leftrightarrow \hspace{0.1cm} A \hspace{0.1cm} \textbf{and} \hspace{0.1cm} (B \hspace{0.1cm} \textbf{and} \hspace{0.1cm} C)$$