1. If \( p \lor q \) is false, the:
   a) \( p \) is true and \( q \) is false
   b) \( p \) is false and \( q \) is true
   c) both \( p \) and \( q \) are true
   d) both \( p \) and \( q \) are false

2. Write each sentence in symbolic form using the given symbols.
   Let \( p \) represent “It is cold.”
   Let \( q \) represent “It is snowing.”
   Let \( r \) represent “The sun is shining.”

   a) It is cold and the sun is shining.
   b) It is not cold and it is not snowing.
   c) The sun is not shining and it is cold.

3. For each given statement:
   a) Write the statement in symbolic form, using the symbols shown below.
   b) Construct the row of the truth table that tells if the statement is true or false.

   Let \( b \) represent “Water boils at 100°C.”
   Let \( f \) represent “Water freezes at 0°C.”
   Let \( t \) represent “Normal body temperature is 37°C.”
   Let \( r \) represent “Room temperature is 60°C.”

   i. Normal body temperature is 37°C and water boils at 100°C.
   ii. Water does not boil at 100°C and water does not freeze at 0°C.
   iii. Water does not freeze at 0°C or normal body temperature is 37°C.

4. Fill in all missing symbols

   \[
   \begin{array}{cccc}
   p & q & \sim p & \sim q & \sim p \lor \sim q \\
   \hline
   \hline
   \hline
   \end{array}
   \]

5. Use the column headings to prepare a complete truth table.

   \[
   \begin{array}{cccc}
   p & q & \sim p & \sim p \lor q & \sim (\sim p \lor q) \\
   \hline
   \hline
   \end{array}
   \]

6. Use the column headings to prepare a complete truth table.

   \[
   \begin{array}{cccc}
   p & q & p \lor q & p \land q & (p \lor q) \lor (p \land q) \\
   \hline
   \hline
   \end{array}
   \]

7. Use the column headings to prepare a complete truth table.

   \[
   \begin{array}{cccc}
   p & q & \sim q & q \lor \sim q & p \lor (q \lor \sim q) \\
   \hline
   \hline
   \end{array}
   \]