Show all work needed to reach your answers.

1. (8 points) Please identify each of the following as either a predicate (P), an implication (I), or a statement which is not an implication (S). For each implication, please circle the hypothesis and underline the conclusion.

   (a) If \( x + y \) is odd and \( y + z \) is odd, then \( x + z \) is odd.

   (b) Some functions are not continuous.

   (c) \( A \Rightarrow B \)

   (d) The instructor picked all 16 games correctly on Thursday.

   (e) When \( x = 2 \), one finds \( y = 5 \).

2. (10 points) Please complete the following truth table.

   \[
   \begin{array}{cccccccc}
   A & B & C & A \lor C & \neg A & \neg(A \Rightarrow B) & (B \land \neg C) \lor A & (B \Rightarrow (A \lor C)) \iff ((C \lor \neg B) \Rightarrow A) \\
   F & T & T & & & & & \\
   T & T & F & & & & & 
   \end{array}
   \]

3. (2 points) Please write \( C \lor \neg B \) as an implication using an \( \Rightarrow \) symbol.