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Score $\qquad$

Show all work to receive full credit. Supply explanations when necessary.

1. (2 points) Let $p$ be the statement "Sophie has been arrested" and let $q$ be the statement "Bubba has not been arrested." Write each statement in symbolic form.
(a) If Sophie has not been arrested, then Bubba has not been arrested.
(b) Neither Sophie nor Bubba has been arrested.
2. (2 points) Construct the truth table for $\sim p \vee q$.
3. (1 point) Suppose $p$ and $r$ are false statements, and $q$ is a true statement. What is the truth value of $q \vee(p \wedge \sim r)$ ?

Take-home portion of Quiz 5. Due Tuesday.
4. (3 points) Construct the truth table for $(p \vee q) \longrightarrow(\sim p)$.
5. (1 point) Without actually constructing it, determine how many rows and columns the truth table for $(p \vee q) \wedge(r \wedge s)$ would have.
6. (1 point) Suppose $p$ is false and $q$ is true. What is the truth value of $p \longrightarrow(q \vee \sim p)$ ?

