**Valid or Invalid**

Using truth tables, determine if the following arguments are valid or invalid. If an argument is invalid, circle the row(s) on the truth table that demonstrate the invalidity.

1. P∨Q

 P

 ∴¬Q

2. P→Q

 ¬Q

 ∴P

3. P↔Q

 Q→R

 ∴Q→(P•R)

4. P•Q

 ∴¬(¬P∨¬Q)

5. P→(Q∨R)

 ¬(P→Q)

 ∴R

6. ∴P→(Q∨¬Q)

7 (P→Q)•(R→S)

 P∨R

 ∴Q∨S

8. P→Q

 Q→P

 ∴P∨Q