**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