

For each of the following, p and q are statements about a number, and the sets P and Q are the sets of numbers for which the statements p and q are true respectively.

For each problem do:

- a. For each logical statements, write the set statement, and for each set statement, write the logical statement.
- b. Show each statement in a Venn diagram, using the set format
- c. Show each statement in a truth table, using the logical statement format

1. $p \wedge q$

2. $p \vee q$

3. \bar{P}

4. $\sim (p \vee q)$

5. $P \cap \bar{Q}$