

Set Identities

In each case, simplify using only Laws of Sets (at back of manual). Identify the law(s) used at each step

$$1. \quad P \cup (\overline{P \cap Q})$$

$$2. \quad \overline{\bar{P} \cup (Q \cap P)}$$

$$3. \quad P \cup (Q \cap \bar{P})$$

$$4. \quad \overline{(\bar{P} \cap Q)}$$

$$5. \quad \overline{P \cap (P \cup \bar{Q})}$$

$$6. \quad Q \cup (\overline{\bar{Q} \cap \bar{P}})$$