

M260

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Exam Preparation for Chapter One

pages 15-16: 7 17-32 39-40 43-47

pages 27-28: 2-4 6-12 14 16 26 34 36

write negation, contrapositive, converse, inverse

pages 39-41: 1 3-5 6 9 12-20 22-26 28 29 40-41

1.

$\sim p$ is called the _____ of p .

$p \wedge q$ is called the _____ of p and q .

$p \vee q$ is called the _____ of p and q .

Finish the "laws". (p , q , and r are statement variables; t is a tautology; and c is a contradiction)

$$p \wedge q \equiv \underline{\hspace{2cm}}$$

$$p \vee q \equiv \underline{\hspace{2cm}}$$

$$(p \wedge q) \wedge r \equiv \underline{\hspace{2cm}}$$

$$(p \vee q) \vee r \equiv \underline{\hspace{2cm}}$$

$$p \wedge (q \vee r) \equiv \underline{\hspace{2cm}}$$

$$p \vee (q \wedge r) \equiv \underline{\hspace{2cm}}$$

$$p \wedge t \equiv \underline{\hspace{2cm}}$$

$$p \vee c \equiv \underline{\hspace{2cm}}$$

$$p \vee \sim p \equiv \underline{\hspace{2cm}}$$

$$p \wedge \sim p \equiv \underline{\hspace{2cm}}$$

$$\sim(\sim p) \equiv \underline{\hspace{2cm}}$$

$$p \wedge p \equiv \underline{\hspace{2cm}}$$

$$p \vee p \equiv \underline{\hspace{2cm}}$$

$$\sim(p \wedge q) \equiv \underline{\hspace{2cm}}$$

$$\sim(p \vee q) \equiv \underline{\hspace{2cm}}$$

$$p \vee t \equiv \underline{\hspace{2cm}}$$

$$p \wedge c \equiv \underline{\hspace{2cm}}$$

$$p \vee (p \wedge q) \equiv \underline{\hspace{2cm}}$$

$$p \wedge (p \vee q) \equiv \underline{\hspace{2cm}}$$

$$\sim t \equiv \underline{\hspace{2cm}}$$

$$\sim c \equiv \underline{\hspace{2cm}}$$

2. Give the rules of inference in symbolic form using p , q , and r for statement variables:

Modus Ponens:

Modus Tollens:

Generalization:

Specialization:

Elimination:

Transitivity:

Division into Cases:

Rule of Contradiction: