

Chapter 3 Homework

Exercise 3-1

Instructions: Use the letters below as variables, then turn the claims below into **symbolic form**.

P = Parsons signs the papers.

Q = Quincy goes (or will go) to jail.

R = Rachel files (or will file) an appeal.

1) If Parsons signs the papers Quincy goes to jail, and if Rachel files an appeal Quincy goes to jail.

2) Quincy goes to jail if either Parsons signs papers or Rachel files an appeal.

3) Either Parsons signs the papers or, if Quincy goes to jail, then Rachel will file an appeal.

4) If either Parsons signs the papers or Quincy goes to jail then Rachel will file an appeal.

5) If Parsons signs the papers then either Quincy will go to jail or Rachel will file an appeal.

Exercise 3-2

Instructions: Creating your own variables, turn the arguments below into **symbolic form**.

1) If Bobo is smart, he can do tricks. However, Bobo is not smart. So he cannot do tricks.

2) If God is always on America's side, then American wouldn't have lost any wars. America has lost wars. Therefore, God is not always on America's side.

3) If your theory is correct, then light passing Jupiter will be bent. Light passing Jupiter is bent. Therefore, your theory is correct.

4) Moore eats carrots and broccoli for lunch, and if he does that, he probably is very hungry by dinnertime. Conclusion: Moore is very hungry by dinnertime.

Exercise 3-3

Instructions: Determine which argument form (of the **9 valid argument forms**) was used to derive the last line of each of the following.

1)

1. $(P \vee R) \rightarrow Q$
2. $\sim Q$
3. $\sim (P \vee R)$

2)

1. $(Q \rightarrow T) \rightarrow S$
2. $\sim S \vee \sim P$
3. $R \rightarrow P$
4. $\sim (Q \rightarrow T) \vee \sim R$

Exercise 3-4

Instructions: Go back to exercise 3-2 and determine which arguments are modus ponens, and which are modus tollens. Also determine if any of the arguments are **deductive fallacies** (affirming the consequent or denying the antecedent).

Exercise 3-5

Instructions: Construct **proofs** for each of the following arguments, using only the following **4 argument forms: MP, MT, DA, or CA.**

1)

1. $E \rightarrow D$
2. $\sim E$
3. $\sim E \rightarrow C \quad \therefore C$

2)

1. $J \vee L$
2. $\sim J$
3. $L \rightarrow K \quad \therefore K$

Exercise 3-6

Instructions: Construct **proofs** for each of the following arguments, using the **9 valid argument forms.**

1)

1. $B \rightarrow C$
2. $(B \rightarrow C) \rightarrow \sim A$
3. $A \vee D \quad \therefore D$

2)

1. $P \rightarrow Q$
2. $\sim P \rightarrow S$
3. $\sim Q \quad \therefore S$

3)

1. $\sim S$
2. $(P \& Q) \rightarrow R$
3. $R \rightarrow S \quad \therefore \sim (P \& Q)$

4)

1. $(P \vee T) \rightarrow S$
2. $R \rightarrow P$
3. $R \vee Q$
4. $Q \rightarrow T \quad \therefore S$

#5)

1. $A \rightarrow B$
2. $C \& \sim B$
3. $(C \vee D) \rightarrow E$
4. $E \rightarrow F \quad \therefore \sim A \& F$