

## Chapter 3 Classwork

### *Exercise 3-7*

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 then Quincy will go to jail, and Rachel will file an appeal.

# 2) If Parsons signs the papers, then Quincy will go to jail and Rachel will file an appeal.

# 3) If Parsons signs the papers and Quincy goes to jail then Rachel will file an appeal.

# 4) Parsons signs the papers and if Quincy goes to jail then Rachel will file an appeal.

# 5) If Parsons signs the papers then if Quincy goes to jail Rachel will file an appeal.

### *Exercise 3-8*

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

# 1) You must not feel good. If you felt good, you would look better. You look terrible.

# 2) For my next car, I want either a Corvette or a Maserati. I don't think I want a Maserati. Therefore, I'll buy a Corvette.

# 3) If you feel terrible, then you do not look good. You do not feel terrible. Therefore, you do not look good.

# 4) Your sister is smart. She's also good at basketball. So your sister is smart and good at basketball.

# 5) Your parents are happy, and if you eat your broccoli then you will be strong. You ate your broccoli so you are strong. So your parents are happy.

*Exercise 3-9*

Instructions: Create an example of modus ponens in natural language. Then, modify the argument to turn it into the affirming the consequent fallacy. Create an example of modus tollens in natural language. Then, modify the argument to turn into the denying the antecedent fallacy.

*Exercise 3-10*

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

# 1)

1.  $\sim S$
2.  $S \vee U$
3.  $W \rightarrow S \quad \therefore \sim W$

# 2)

1.  $A \rightarrow B$
2.  $\sim B$
3.  $\sim A \rightarrow \sim D$
4.  $D \vee E \quad \therefore E$

# 3)

1.  $(A \vee B) \vee (B \rightarrow C)$
2.  $(A \vee B) \rightarrow (\sim H \rightarrow \sim J)$
3.  $C \rightarrow \sim D$
4.  $G \rightarrow B$
5.  $\sim(\sim H \rightarrow \sim J) \quad \therefore G \rightarrow \sim D$

*Exercise 3-11*

Instructions: Construct **proofs** for each of the following arguments, using only the following **five argument forms: ADD, SIMP, CONJ, CD, or DD.**

# 1)

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

# 2)

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

# 3)

1.  $B$
2.  $A \quad \therefore (A \vee D) \& (B \vee C)$

*Exercise 3-12*

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

# 1)

1.  $R \rightarrow P$
2.  $Q \rightarrow R \quad \therefore Q \rightarrow P$

# 2)

1.  $R \ \& \ S$
2.  $S \rightarrow P \quad \therefore P$

# 3)

1.  $(P \vee Q) \rightarrow R$
2.  $Q \quad \therefore R$

# 4)

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

# 5)

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

# 6)

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

# 7)

1.  $\sim C$
2.  $B \rightarrow C$
3.  $B \vee A$
4.  $A \rightarrow E \quad \therefore E$

# 8)

1.  $I$
2.  $I \rightarrow (D \vee S)$
3.  $S \rightarrow L$
4.  $\sim L \quad \therefore D$

# 9)

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

# 10)

1.  $B \vee (D \& E)$
2.  $(G \vee C) \rightarrow \sim B$
3.  $(D \vee H) \rightarrow J$
4.  $G \quad \therefore J$