

**Worksheet Exercise 2.11.B.**

Demonstrating Logical Truths

Name \_\_\_\_\_

Class \_\_\_\_\_ Date \_\_\_\_\_

**Part B.** Give deductions to show that the following sentences are truths of Logic, i.e., tautologies. Use the space on these two pages efficiently.

1.  $(B \vee S) \supset (\sim B \supset S)$

2.  $P \vee (P \supset Q)$

3.  $(A \& (B \& C)) \vee [A \supset (\sim B \vee \sim C)]$

4.  $(S \& \sim M) \supset (S \vee M)$

5.  $(A \& B \& C) \supset (B \vee Q)$

6.  $[(Q \supset U) \& \sim U] \supset \sim Q$

7.  $[(P \vee Q) \& (P \supset R)] \supset (R \vee Q)$

8.  $(A \& B) \vee (A \& \sim B) \vee (\sim A \& B) \vee (\sim A \& \sim B)$

Two columns of horizontal lines for writing deductions.

