Math 212 Homework 1

Your name goes here

Due January 23, 2019

Example A. Let P and Q be statements. Construct a truth table for the statement

$$[P \wedge (P \wedge (P \wedge Q) \wedge Q)] \vee Q.$$

Solution.

P	Q	??
T	T	?
T	F	?
F	T	?
F	F	?

Example B. Let S and T be statements. Formulate a statement logically equivalent to $S \wedge (T \vee \neg S)$ using only S, T, $\neg$, and $\vee$ (each of which you can use as many times as you want/need). Use a truth table to prove that your statement is logically equivalent.

Solution.

Example C. Let A and B be statements. Determine whether $(A \vee (\neg A \wedge B)$ and $\neg[\neg A \wedge (A \vee \neg B)]$ are logically equivalent. Justify your answer with a truth table.

Solution.