Assignment 2

Q1.

Below is a partially-completed truth table for the statement ¬P→(QR).

Enter T or F below for the positions with the bolded numbers.

Q	R	P	¬P	(QR)	¬P→(QR)
T	T	T	F	T	T
T	T	F	T	**1**	**3**
T	F	T	F	**2**	**4**
T	F	F	T	F	**5**
F	T	T	F	F	[_____](T)
F	T	F	T	F	[_____](F)
F	F	T	F	F	[_____](T)
F	F	F	T	F	[_____](F)

Q1.1. Value of 1

Q	R	P	¬P	(QR)	¬P→(QR)
T	T	F	T	**1**	**3**

Q1.2. Value of 2

Q	R	P	¬P	(QR)	¬P→(QR)
T	F	T	F	**2**	**4**

Q1.3. Value of 3

Q	R	P	¬P	(QR)	¬P→(QR)
T	T	F	T	**1**	**3**

Q1.4. Value of 4

Q	R	P	¬P	(QR)	¬P→(QR)
T	F	T	F	**2**	**4**

Q1.5. Value of 5

Q	R	P	¬P	(QR)	¬P→(QR)
T	F	F	T	F	**5**

Q2. Logical Equivalence

The statements P→(QR) and (P→Q)(P→R) are logically equivalent

A. True

B. False

C. Impossible to tell

Q3. Statements

For the following, determine if the Phrase is a statement (proposition)

Q3.1. Big Bear

The big bear in the blue house.

A. True

B. False

C. Impossible to tell

Q3.2. Green people

All people are green on the inside.

A. True

B. False

C. Impossible to tell

Q3.3. False statement

This statement is false.

A. True

B. False

C. Impossible to tell

Q4. Implication

Fill out the truth table for $P \rightarrow Q$.

Q4.1. True implies True

| P | Q | $P \rightarrow Q$ |

|---|---|---|
| T | T | **1** |

Q4.2. True implies False

P	Q	P→Q
T	F	**2**

Q4.3. False implies True

P	Q	P→Q
F	T	**3**

Q4.4. False implies False

P	Q	P→Q
F	F	**4**

Q5. Length of a truth table

How many rows does a truth table with 3 atomic propositions have?

Q6. Number of nonequivalent propositions

How many non equivalent propositions can we construct starting with 3 atomic propositions?