

ProofSpace Comprehension Quiz

Preliminaries

Introduction to Logic

Standard

1 For each of the following, answer “S” for “is a statement” and “N” for “is not a statement.”

- a) “Attack of the Clones” is the best Star Wars movie.
- b) “Attack of the Clones” is the fourth Star Wars movie.
- c) The capital of Cambodia is Phnom Penh.
- d) The year is 1994 and you’re pretty awesome.
- e) The year is 1406 or Narendra Modi is the Prime Minister of India.
- f) $2 * 2 = 4$
- g) $2 + 4 \neq 6$.
- h) $x + 5 = 7$ and $x = 2$.
- i) $2 - 7 = 9$ or $x = 2$.

2 Consider the following definition:

Definition: A natural number n is **casual** if it is greater than 1 and its positive factors are exactly $1, 2, \frac{n}{2}$, and n .

Using the information given in the definition, for each of the following write “T” if the statement is true and “F” if the statement is false.

- a) 5 is casual
- b) 1 is casual.
- c) 14 is casual.

- d) 12 is casual.
- e) -13 is casual and 8 is casual.
- f) -13 is casual or 8 is casual.

3 Complete the following truth table:

P	Q	$\neg(P \vee Q)$
T	T	_____
T	F	_____
F	T	_____
F	F	_____

4 Complete the following truth table:

P	Q	R	$(\neg P \vee Q) \wedge \neg R$
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____