

# 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:

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