

Duration: 20 minutes

Aids Allowed: NONE

Student Number: _____

Last (Family) Name: _____

First (Given) Name(s): _____

Tutorial Room: _____ TA's Name: _____

This question uses the following database:

Method	Instance	Static
1	No	Yes
2	No	Yes
3	Yes	No
4	No	No
5	Yes	No
6	No	Yes

Consider the statement:

(S1) Each method that is not an instance method, is a static method.

(a) State whether (S1) is true or false. If it is false, then justify your answer by citing a specific counter-example.

False, Method 4 is a counterexample, because it is not an instance method, but it is not a static method.

(b) Write (S1) in precise symbolic notation.

Let M = set of all methodsLet $I(m)$ = m is an instance methodLet $S(m)$ = m is a static method $\forall m \in M, \neg I(m) \rightarrow S(m)$

(c) Write the converse of (S1) in English and in precise symbolic notation.

If a method is a static method, then it is not an instance method.

Let M = set of all methodsLet $I(m)$ = m is an instance methodLet $S(m)$ = m is a static method $\forall m \in M, S(m) \rightarrow \neg I(m)$