1. (8 marks) Consider the predicate

   $$(\forall x \in D.[R(x) \text{ IFF } \forall y \in D.A(x,y)]) \text{ IMPLIES } \forall y \in D.(R(y) \text{ IMPLIES } A(x,y)).$$

   (a) Give an interpretation with $D = \{1,2\}$ that makes this predicate true. Justify your answer.
   Solution:

   (b) Give an interpretation with $D = \{1,2\}$ that makes this predicate false. Justify your answer.
   Solution: