Sample Midterm



1. Which one of the following sentences has the same meaning as “(if there is) no pain, (then there is) no gain”?
   1. Pain is sufficient for gain.



* 1. There is pain unless there is no gain.



* 1. Pain implies gain.



* 1. There is gain when there is pain.



1. Which one of the following states satisfies ?



1. Which one of the following statements is equivalent to Java/C program fragment:

while(++x>n) {y\*=x++;}



1. Let . What is where



1. Let .Which one of the following is a possible ?



1. Which of the following states satisfies ?



1. Let where . Which of the following proposition about must be true?



* 2. is loop-free.
  3. is deterministic.

1. Let and . Which of the following triples must be valid under total correctness?



1. If deterministic program diverges on 𝜎, then which one of the following must be true for arbitrary ?



* 1. None of the above.



1. Define predicate function which returns 𝑇𝑟𝑢𝑒 if and only if array 𝑎 contains the greatest integer (or one the greatest integers) among arrays and . You may assume that and are all non-empty one-dimensional arrays of integers.

1. Calculate , where **. Do not logically simplify your solution.**