

# Problem Set 6

Questions to test understanding of P/NP problems.

1

Are all decision problems in the complexity class NP?

2

Can optimization problems be in NP?

3

Travelling salesman problem is defined as a salesman planning to visit a bunch of cities to sell his merchandise. The salesman wants to cut costs and needs to follow a route which allows him to visit every city but at the same time is the shortest route among all possible routes. Is this problem in NP-complete?

4

If  $P=NP$  is proven, will integer factorization be still in complexity class NP-intermediate?

5

NP-complete problems can't be solved at all?

Check Answers