Intractability

Back to Week 6

2/3 points earned (66%)

Quiz passed!

0 / 1 points

1.
(seed = 943349)

Which of the following problems are known to be search problem? Check all that apply.

- [ ] MINIMUM-SPANNING-TREE: given a graph with positive edge weights, find a minimum spanning tree.

This should be selected

- [x] ILP: given a system of N variables and M linear equations, find a binary solution.

Correct

- [ ] LONGEST-CYCLE: given a graph, find the longest simple cycle.

Un-selected is correct

- [x] EULER-PATH: given an undirected graph, find a simple path that visits every edge exactly once.

Correct

- [x] LP: given a system of N variables and M linear inequalities, find a solution.

Correct

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1 / 1 points

2.
(seed = 909573)

Suppose that problem X is in NP-complete; problem Y is in NP; and X polynomial-time reduces to Y. Which of the following can you infer? Check all that apply.

- [x] FACTOR polynomial-time reduces to Y.

Correct

- [x] If P != NP, then X cannot be solved in polynomial time.

Correct

- [x] If X cannot be solved in polynomial time, then P != NP.

Correct

- [x] X and Y can both be solved in exponential time.

Correct

- [ ] Y polynomial-time reduces to FACTOR.

Un-selected is correct

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1 / 1 points

3.
(seed = 484263)

In the context of computational complexity, what does the the acronym NP stands for?

- [x] nondeterministic polynomial time

Correct

- [ ] nope

Un-selected is correct

- [ ] Neyman-Pearson

Un-selected is correct

- [ ] Neptunium

Un-selected is correct

- [ ] not possible

Un-selected is correct