Intractability

✖ **1/3** points earned (33%)

You haven't passed yet. You need at least 66% to pass.
Review the material and try again! You have 3 attempts every 8 hours.

Review Related Lesson

✖ 0 / 1
points

1.
(seed = 806930)

Suppose that problems A and B are both in NP and that A poly-time reduces to B. Which of the following can you infer? Check all that apply.

☐   If B cannot be solved in poly-time, then P != NP.

This should be selected

☑   If A can be solved in poly-time, then P = NP.
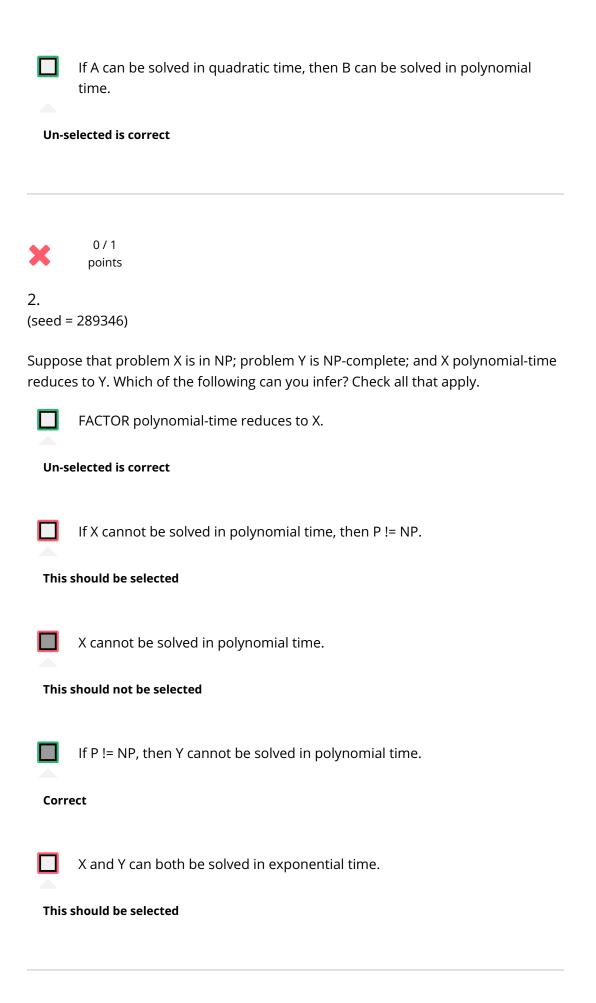
This should not be selected

☐   A and B can both be solved in exponential time.

This should be selected

☑   If B can be solved in poly-time, then so can A.

Correct

☐ If A can be solved in quadratic time, then B can be solved in polynomial time.

Un-selected is correct

✗ 0 / 1 points

2.
(seed = 289346)

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

☐ FACTOR polynomial-time reduces to X.

Un-selected is correct

☐ If X cannot be solved in polynomial time, then P != NP.

This should be selected

☑ X cannot be solved in polynomial time.

This should not be selected

☑ If P != NP, then Y cannot be solved in polynomial time.

Correct

☐ X and Y can both be solved in exponential time.

This should be selected

✅ 1 / 1
points

3.
(seed = 494117)

A problem is intractable if and only if it cannot be solved in

☐ constant time

Un-selected is correct

☐ linear space

Un-selected is correct

☐ linear time

Un-selected is correct

☐ exponential space

Un-selected is correct

☑ polynomial time

Correct