Quiz 7

Due May 24 at 11:59pm **Points** 8 **Questions** 8
Available May 15 at 11:59pm - May 24 at 11:59pm 9 days **Time Limit** 15 Minutes

Instructions

Note: responses and correct answers will be shown after the due date.

This quiz was locked May 24 at 11:59pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	9 minutes	7 out of 8

Score for this quiz: **7** out of 8
Submitted May 17 at 11:29pm
This attempt took 9 minutes.

Question 1 — 1 / 1 pts

Every problem in NP can be reduced to the CIRCUIT-SAT problem in polynomial time.

Correct!

- (●) True
- ( ) False

Question 2 — 1 / 1 pts

Let X be an NP-complete problem and Y and Z be two other problems not known to be in NP. Y is polynomial time reducible to X and X is polynomial-time reducible to Z. Which of the following statements is true?

- Y is in NP-Hard
- Y is in NP-complete
- Z is in NP-complete

Correct!

- Z is in NP-Hard

Question 3

0 / 1 pts

Every problem in P can be reduced to the CIRCUIT-SAT problem in polynomial time,

orrect Answer

- True

ou Answered

- False

Question 4

1 / 1 pts

If you discover a polynomial time algorithm for the SUBSET-SUM problem this will imply that P=NP.

- This is unknown
- False

Correct!

- True

Question 5

1 / 1 pts

A problem in NP is in NP-complete if

- It can be reduced to CIRCUIT-SAT in polynomial time
- It can be reduced to all problems in NP-complete.
- Some problem in P can be reduced to it.

Correct!

- The 3-SAT problem can be reduced to it in polynomial time.

Question 6

1 / 1 pts

The problems 3-SAT and 4-SAT are

Correct!

- Both in NP-complete
- Both in NP-Hard but not in NP.
- None of the above
- Both in P

Question 7

1 / 1 pts

NP-complete is a subset of NP-Hard.

Correct!

- (●) True
- ( ) This is unknown
- ( ) False

Question 8

1 / 1 pts

Consider two decision problems X and Y. If X reduces in polynomial time to 3-SAT and 3-SAT reduces in polynomial time to Y. Which of the following can be inferred from the previous statement?

- ( ) Y is in NP and X is in NP-Hard

Correct!

- (●) X is in NP and Y is in NP-Hard
- ( ) Both X and Y are in NP.
- ( ) Both X and Y are in NP-hard.

Quiz Score: **7** out of 8