Quiz 12 - Preview

0:29:54 remaining

Question 1 (1 point)

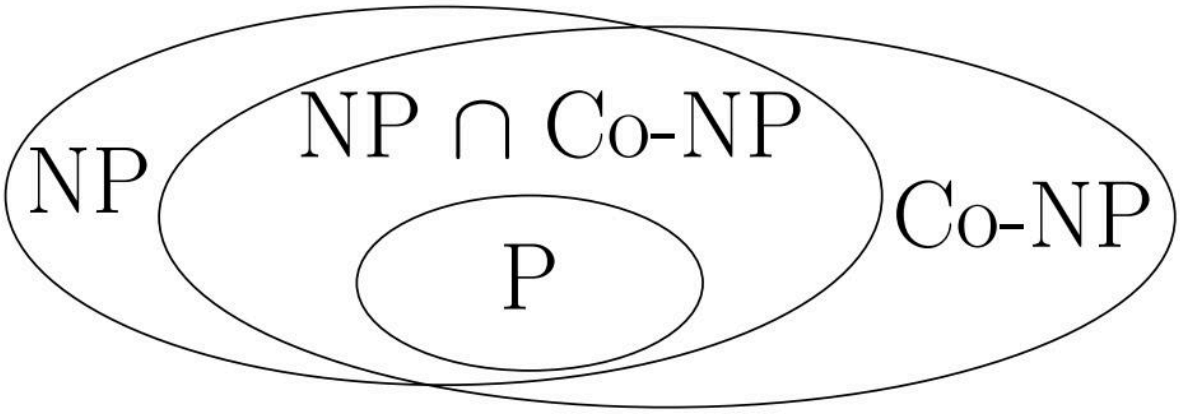
How do we show a problem is NP-complete? Please select **all** correct solutions.

- [ ] Next, prove the problem is NP-complete by reducing it to a known NP-complete problem.
- [x] First, prove that the problem is in NP.
- [x] Next, prove the problem is NP-complete by reducing a known NP-complete problem to it.
- [x] Prove the problem is NP-complete by definition.

Question 2 (1 point)

Which of the following graph depicts the possible correct relation between P, NP, co-NP? Please select **all** correct solutions.

- [x]



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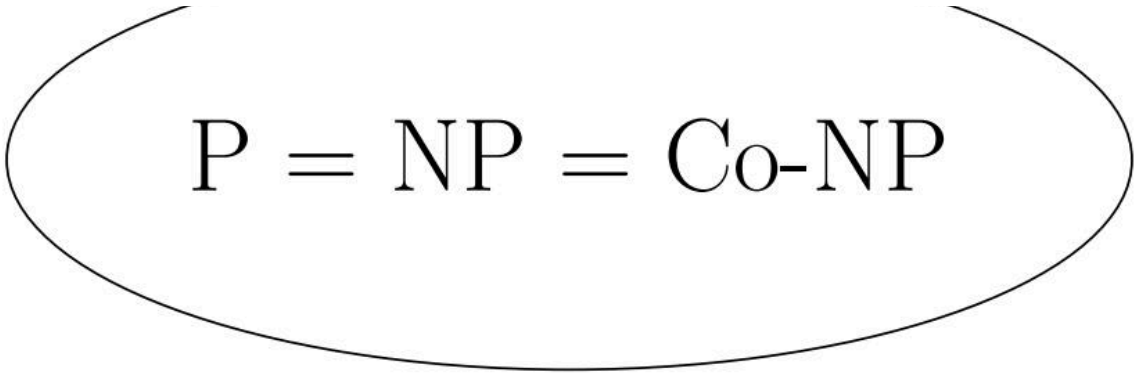

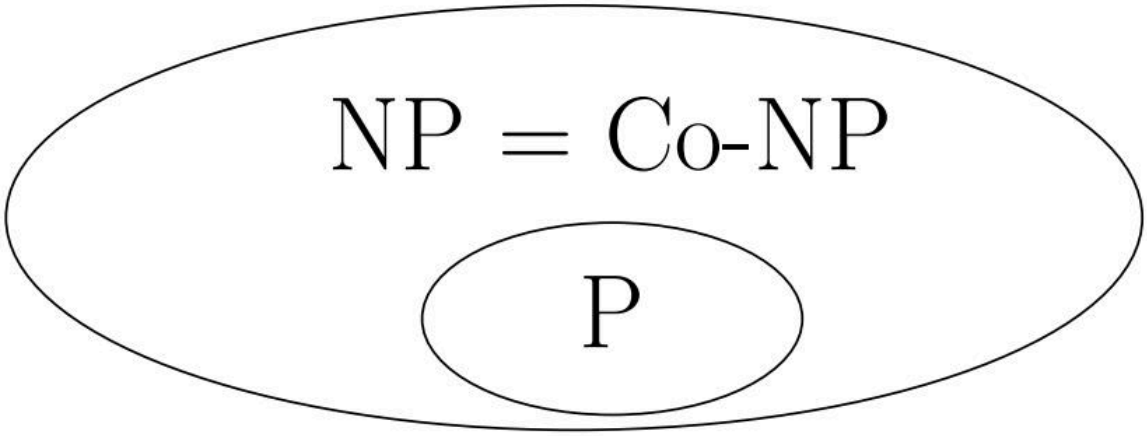

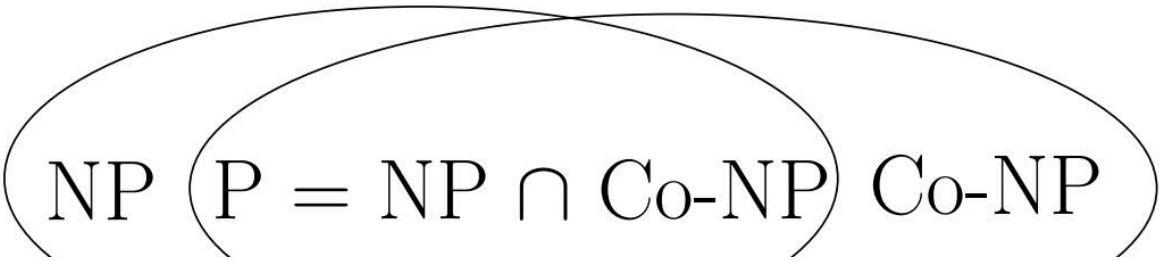

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Question 3 (1 point)

Which of the following statement(s) is/are True?

- [x] If HC problem polytime-reduces to a problem in P, then P=NP.
- [ ] If problem X is in NP hard, then X is in NP complete.
- [x] If problem X is in NP complete, then X is in NP hard.
- [x] All problems in **P** can polytime-reduce to a problem in NP complete.

Question 4 (1 point)

Which of the following boolean formula is unsatisfiable?

- $(z_1 \wedge \neg z_1) \vee (z_2 \wedge \neg z_2) \vee z_3$
- $a \vee b \vee \neg b$
- [x] $(x \wedge y) \wedge (\neg x \vee \neg y)$

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$$(x_1 \vee \neg x_2) \wedge (\neg x_1 \vee x_2)$$

Question 5 (1 point)

Given a boolean formula

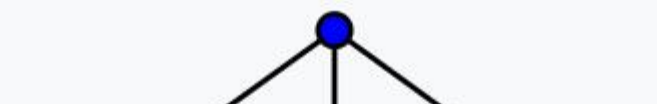
$$(x_1 \vee x_2) \wedge (\neg x_1 \vee x_2)$$

, how many distinct assginments makes this formula true?

- 1
- 2
- 3
- 4

Question 6 (1 point)

What is the size of the maximum independent set of the following graph?

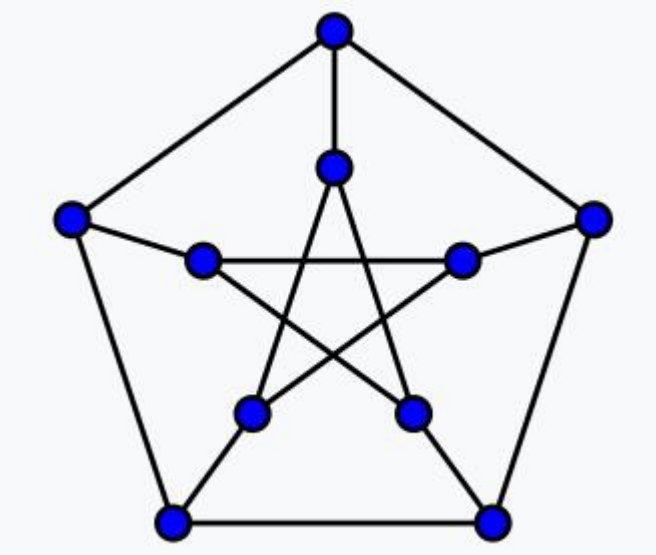


Quiz 12 - Preview

0:27:56 remaining

Question 6 (1 point)

What is the size of the maximum independent set of the following graph?



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