Wrap-up
CSCI 338
Quiz 3 Logistics

1. During class on Thursday 12/08.
2. You can bring your book and any notes you would like, but no electronic devices.
3. You may assume anything proven in class or on homeworks unless specifically told you can’t.
4. 4 questions:
   1) Show a problem is in P.
   2) Show a problem is in NP-Complete (easier).
   3) Show a problem is in NP-Complete (harder).
   4) Conceptual question.
Vertex Cover vs Independent Set

Prove that the compliment of a VC is an IS and that the compliment of an IS is a VC.
Vertex Cover vs Independent Set

Prove that the complement of a VC is an IS and that the complement of an IS is a VC.

\[ (n - k) \text{- IS} \iff k \text{- VC} \]
Vertex Cover vs Independent Set

Prove that the complement of a VC is an IS and that the complement of an IS is a VC.

$k$ - VC $\iff (n - k)$ - IS
Prove that the compliment of a VC is an IS and that the compliment of an IS is a VC.

$\left( n - k \right)$ - IS $\iff k - \text{VC}$
Vertex Cover vs Independent Set

Prove that the compliment of a VC is an IS and that the compliment of an IS is a VC.

\[ (n - k) \text{ - IS} \iff k \text{ - VC} \]
Vertex Cover vs Independent Set

Prove that the compliment of a VC is an IS and that the compliment of an IS is a VC.

\[ n - k \ - \ IS \ \iff \ k \ - \ VC \]

\[ (n - k) - IS \]
Vertex Cover vs Independent Set

Prove that the compliment of a VC is an IS and that the compliment of an IS is a VC.

\[ n - k \Rightarrow IS \quad \Leftrightarrow \quad k \Rightarrow VC \]

\[ k \ - \ VC \quad \Leftrightarrow \quad (n - k) \ - \ IS \]