Before Class:
- Journal Up

1. Approximation Algorithms
   - Supposing that we’ve shown that a problem is hard, what can we do?
   - Other than whine and complain?
   - Come up with an algorithm that can come close
   - How can you measure “close?”
   - Now we’re talking about optimization problems again
   - Shortest Path Example
   - We usually only use approximations for problems that we don’t think are in \( P \)

2. Vertex Cover Problem
   - Reminder of Problem
   - Demonstration
   - What is running time?

3. Traveling Salesman Problem
   - Problem Description
   - Triangle Inequality
   - Is this a reasonable thing to require?
   - Demonstration of Approximation Algorithm
   - Can you do this without the triangle inequality?
   - Proof of no Approximation Algorithm

Next Class:
- Evaluations!