

## Writing Assignment #1: Special Delivery

In this assignment, you will take on the role of a delivery truck driver who is making deliveries to several cities in our region. You will write a letter to your boss explaining the route you took, using the algorithms from class.

Your trip will start in Harrisburg, PA, and visit each of the following cities once before returning to Harrisburg.

- Altoona, PA
- Syracuse, NY
- Ocean City, MD
- Roanoke, VA
- Cleveland, OH
- Wheeling, WV

Your task for this assignment is to explain to your boss how the mathematics you have learned in this class helped you solve this problem. Specifically, you should do the following:

- Visit a mapping website like Google maps (<http://maps.google.com>) to find the driving distances between each pair of cities (drawing a chart may help you organize this information).
- Explain to your boss what a Hamiltonian circuit is and why it is relevant to this problem. If you use vocabulary words like “vertex” or “circuit,” make sure you explain what those words mean.
- Explain the nearest neighbor algorithm and how it can help you find a good solution to the problem. Use this algorithm and describe the solution it gives.
- Explain the sorted edges algorithm and how it can help you find a good solution to the problem. Use the algorithm and describe the solution it gives.
- Explain the brute-force method and how it can be used to find the best solution to the problem. You do not need to use the brute force method, but you should explain to your boss why it might not be reasonable for her to expect you to do so.

Your write-up should be *typed* and approximately *three pages long*. Be creative! You will be graded on both the content listed above as well as clarity, spelling, and grammar. I will use the rubric printed on the opposite side of this page to grade your assignment. **Please staple this page onto the front of your assignment, with the rubric facing up.** Late assignments will not be accepted.

## Writing Assignment #1 Grading Rubric

Staple this page to the front of your assignment with this side facing up!

Name: \_\_\_\_\_

Assignment is submitted on time, with this rubric attached, and is neat and legible.	/6
Grammar is correct, words are spelled correctly, and thoughts are organized well.	/6
Student correctly explains the concept of Hamiltonian circuits and why it is relevant to this problem.	/6
Student correctly explains the nearest neighbor and sorted edges algorithms and the solutions that they give for this problem.	/6
Student correctly explains the brute force method and discusses the advantages and disadvantages of this method.	/6
Extra credit points for exceptional write-ups.	
<b>Total</b>	<b>/30</b>