Math 1060: Quiz June 13, 2017 Name: Key

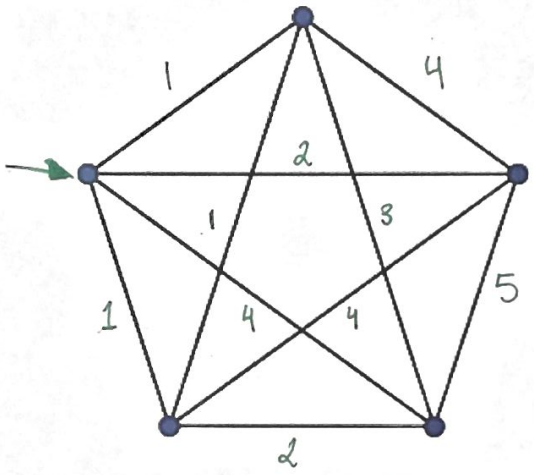
1. (___ / 2 points) Fill in the blank:

   The sorted-edges algorithm and nearest-neighbor algorithms are Heuristic algorithms because they do not necessarily find a Hamiltonian circuit, they just approximate one.

   The sorted-edges algorithm and nearest-neighbor algorithm are used to find Hamiltonian circuits in a complete graph.

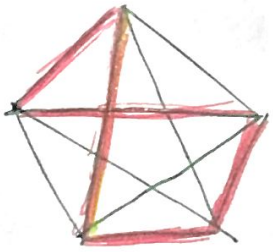
2. (___ / 5 points) Use either the sorted edges algorithm or the nearest-neighbor algorithm (starting at the indicated vertex) on the following graph. What is the cost?

There are multiple possible answers, since ties will occur. Here's two.



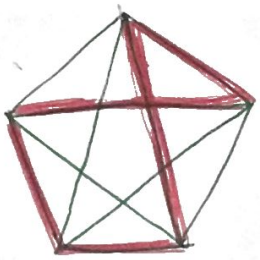
Sorted Edges

1, 1, 1, 2, 2, 3, 4, 4, 5



Cost:
1+1+2+2+5
= 11

Nearest-Neighbor



1+2+3+4+2
= 12

3. (___ / 3 points) Use Kruskal's algorithm to find a minimal spanning tree in the following graph.

Cost:
1+1+2+3+3 = 10