CS104 Homework 2
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Professor Kempe, T TH 12:30PM

1. See makefile in folder
2. Done
3. See HW2Q3.cpp
4.

The path always starts on 1, therefore to calculate all the possible permutations of the rest of the 19 numbers with the numbers 2 to 20 inclusive is:

$$_{19}P_{19} = \frac{19!}{(19-19)!} = 19! = 1.22 \times 10^{17}$$

The actual number of orders the program tried is:

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The number of solutions is: 162
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The number is significantly smaller than the theoretical number of orders is because the theoretical number did not consider in the fact that there are only three adjacent sides to every number and thus did not consider the fact that it is a path, not a simple permutation computation.

5. See HW2Q6.cpp

6. See HW2Q6.cpp