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2. The call to Map<Coord, int> causes a compilation error because there is no “less-than” operator defined for the Coord class, which is necessary for it to be used an a key in the map class, because the Map class sorts the list into descending order. Therefore, it must be able to compare the keys.

3. a. The time complexity of this algorithm is O(N^3). The outermost for loop will run N times, and the second inner for loop will run N-1 times, so we simplify that to N. The loop inside of that loop will also run N-1 times, which we also simplify to N. Therefore, the time complexity of this algorithm is N\*N\*N, so N^3.

b. The time complexity of this algorithm is still O(n^3). This is because, even though the “limit” of the first inner loop was changed from N to i, the maximum value i can have is N, so the time complexity of the algorithm has not changed.

4. a. The time complexity of this algorithm is O(N). Getting the first pair in the map is always O(1). Accessing every pair in the map takes N times, since you have to go through every pair. Inside the loop, the get function is used, which has a time complexity of O(n^2).Inserting a pair is also O(1), and swapping the contents of the two maps takes only one step, so its O(N^2).

b. The time complexity of this algorithm is O(N). P points to the first Node in the list, as long as the map is not empty. If it does not, the for loop then goes through every Node in the list, which has a time complexity of N. Therefore, the time complexity of this algorithm is the same as in part a: O(N).