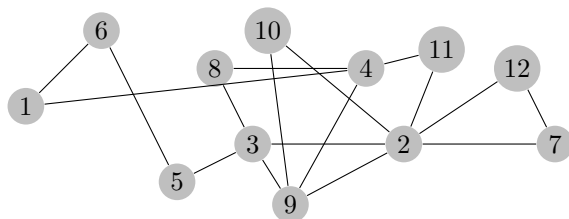1. Q — Perform the algorithm described in Theorem 5.13 on the graph in Exercise 8. Make sure you do not try to be smarter than the algorithm, in particular the following sentence followed exactly: *"We then choose the least integer i for which there is an edge incident with x_i that has not already been traversed."*
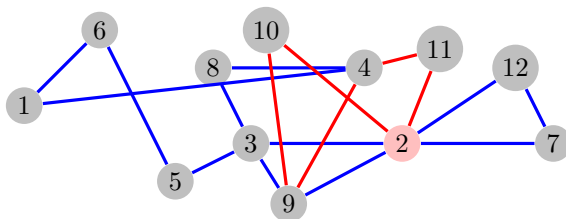

A — Eulerian algorithm:

1) Starting with (1), visit every connected vertex, in the ascending order of ordinal until you reach (1):

$(1, 4, 8, 3, 2, 7, 12, 2, 9, 3, 5, 6, 1)$
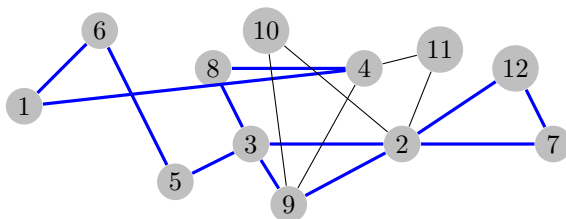
2) If there are still unvisited edges, break the circuit at the lowest vertex incident with an unvisited edge: in this case, (2) and find a circuit using step 1) back to this new starting point (2):

The first circuit, broken at (2):

$(1, 4, 8, 3, 2, 7, 12, 2, \ldots, 2, 9, 3, 5, 6, 1)$

The new circuit starting at (2):

$(2, 10, 9, 4, 11, 2)$

The two circuits, merged:

$(1, 4, 8, 3, 2, 7, 12, 2, 10, 9, 4, 11, 2, 9, 3, 5, 6, 1)$

Since there aren't any unvisited edges, we have the *Eulerian Circuit*.