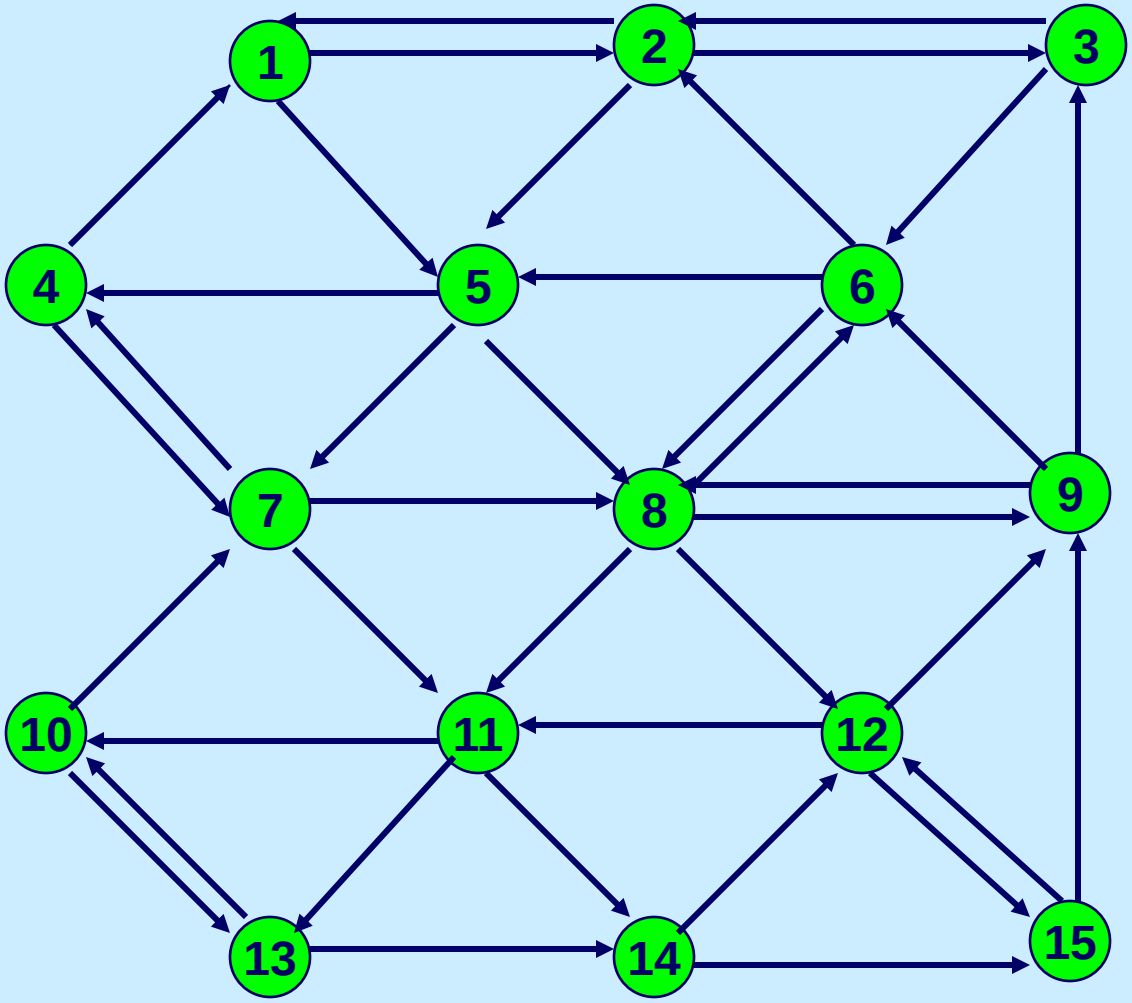
Network Optimization

Eulerian Cycles in directed graphs

James Orlin 2010

The initial network

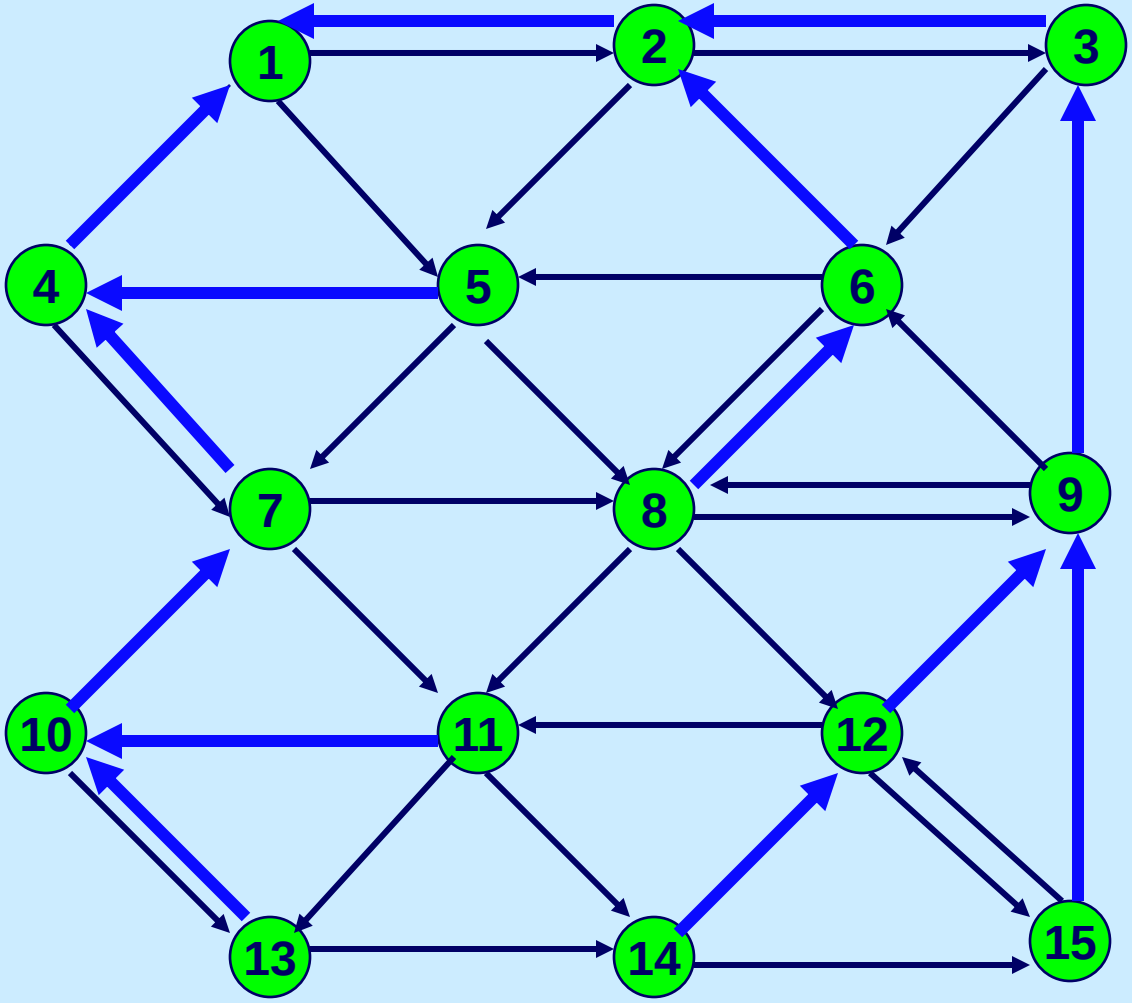
Every node has the same number of arcs coming in as going out.



Determine a tree directed into node 1

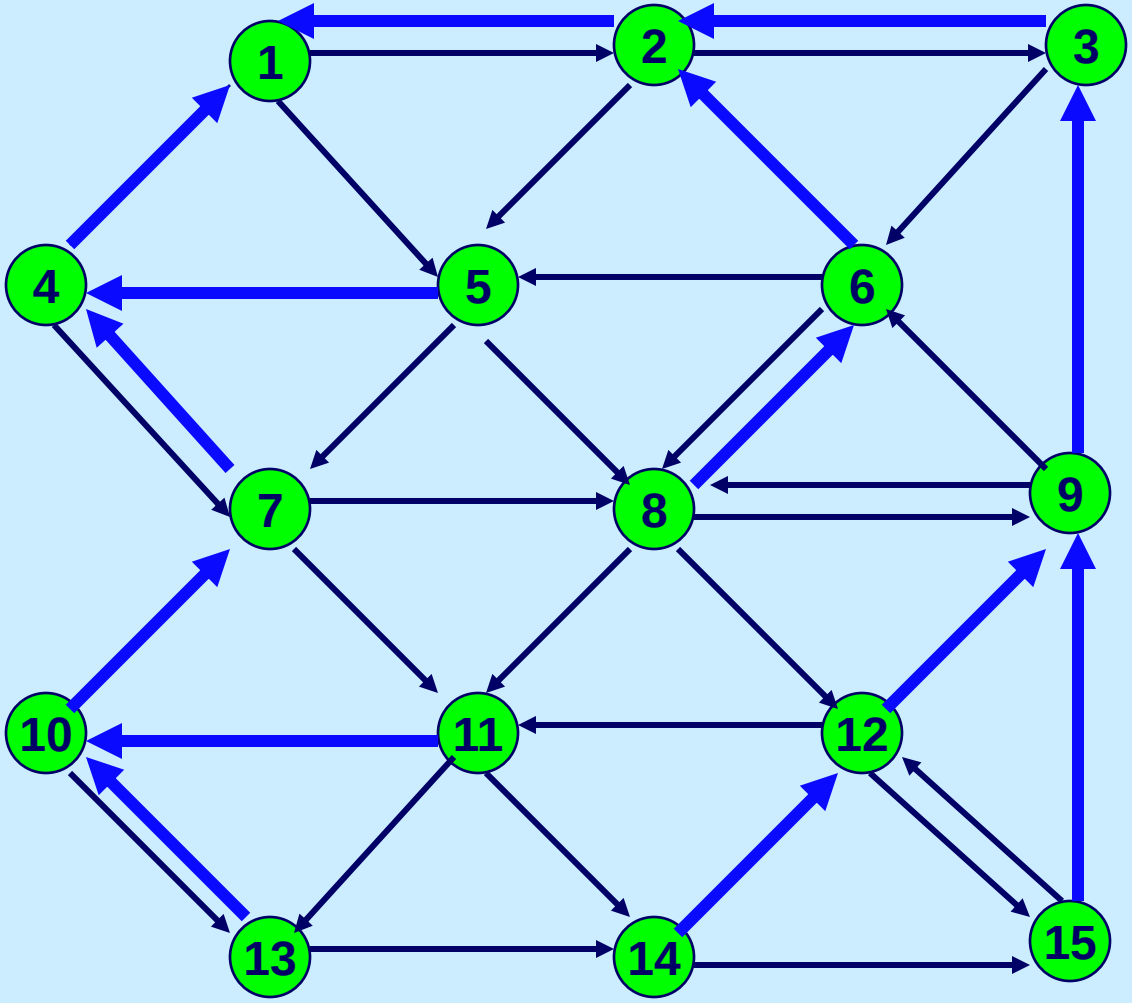
Determine a bfs (or dfs) tree directed into node 1.

In the tree, each node has one arc coming out except node 1.



Order the arcs coming out of each node

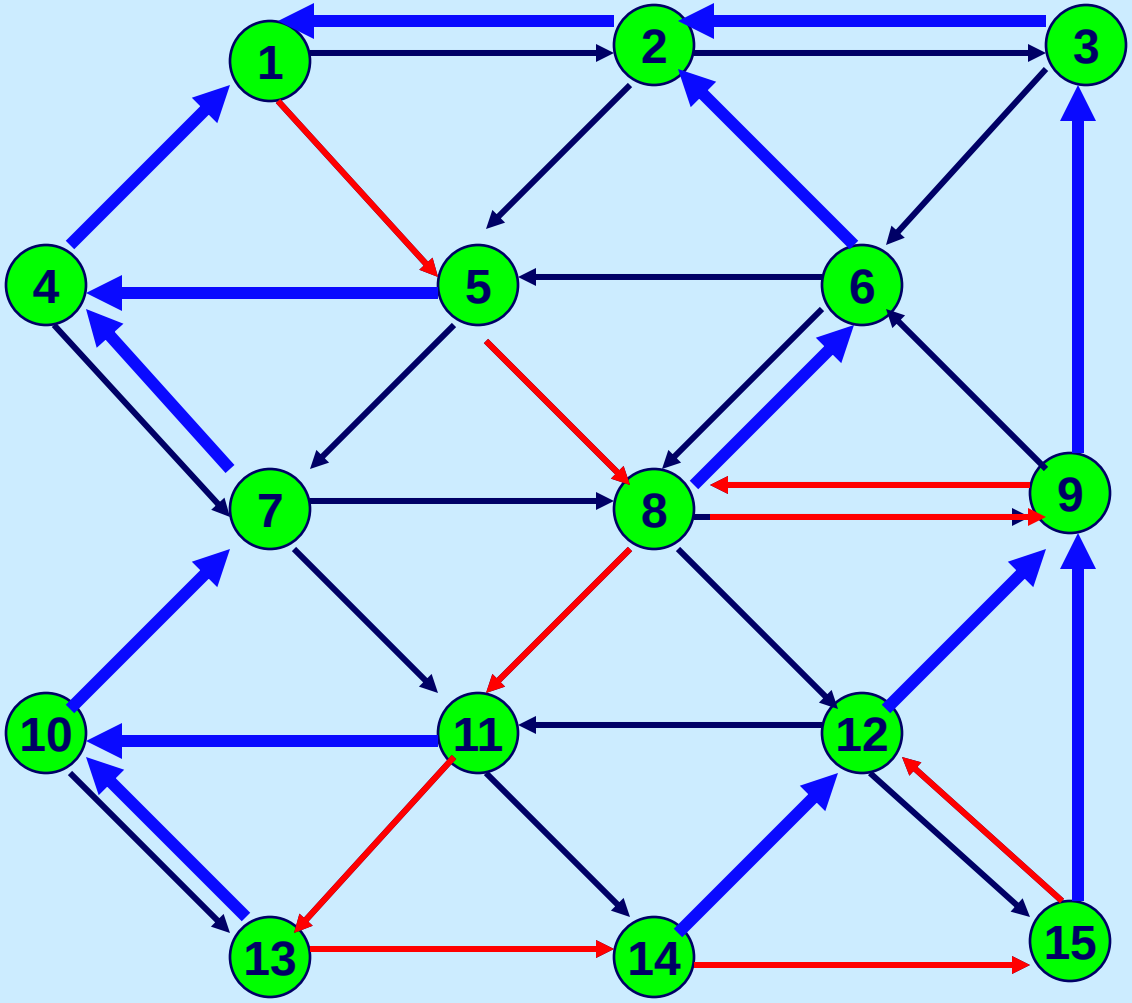
The tree arc out of node j should be the last arc of A(j)



Create the walk

Start at node 1 and create a walk.

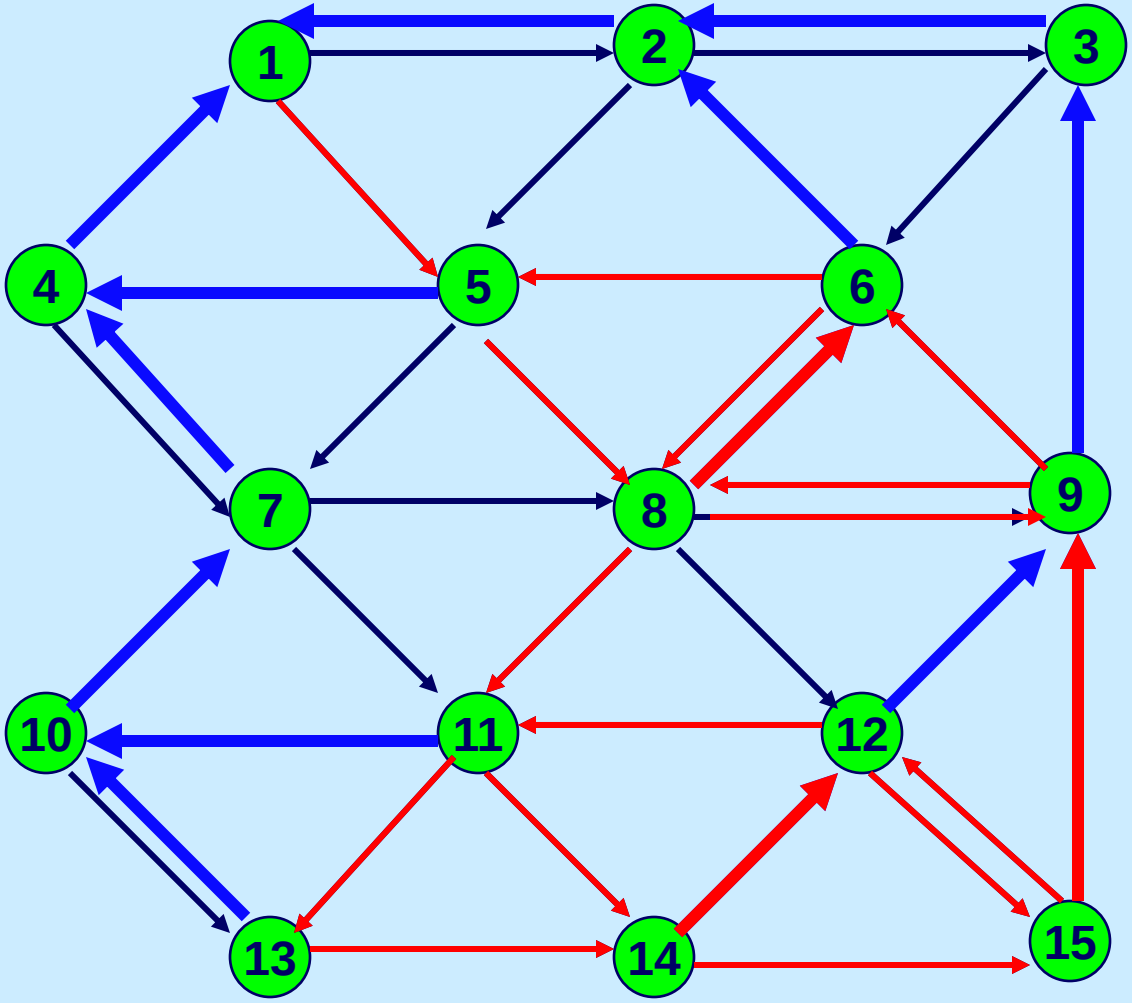
Visit nodes of A(j) in order.



Continue the walk

Continue the walk.

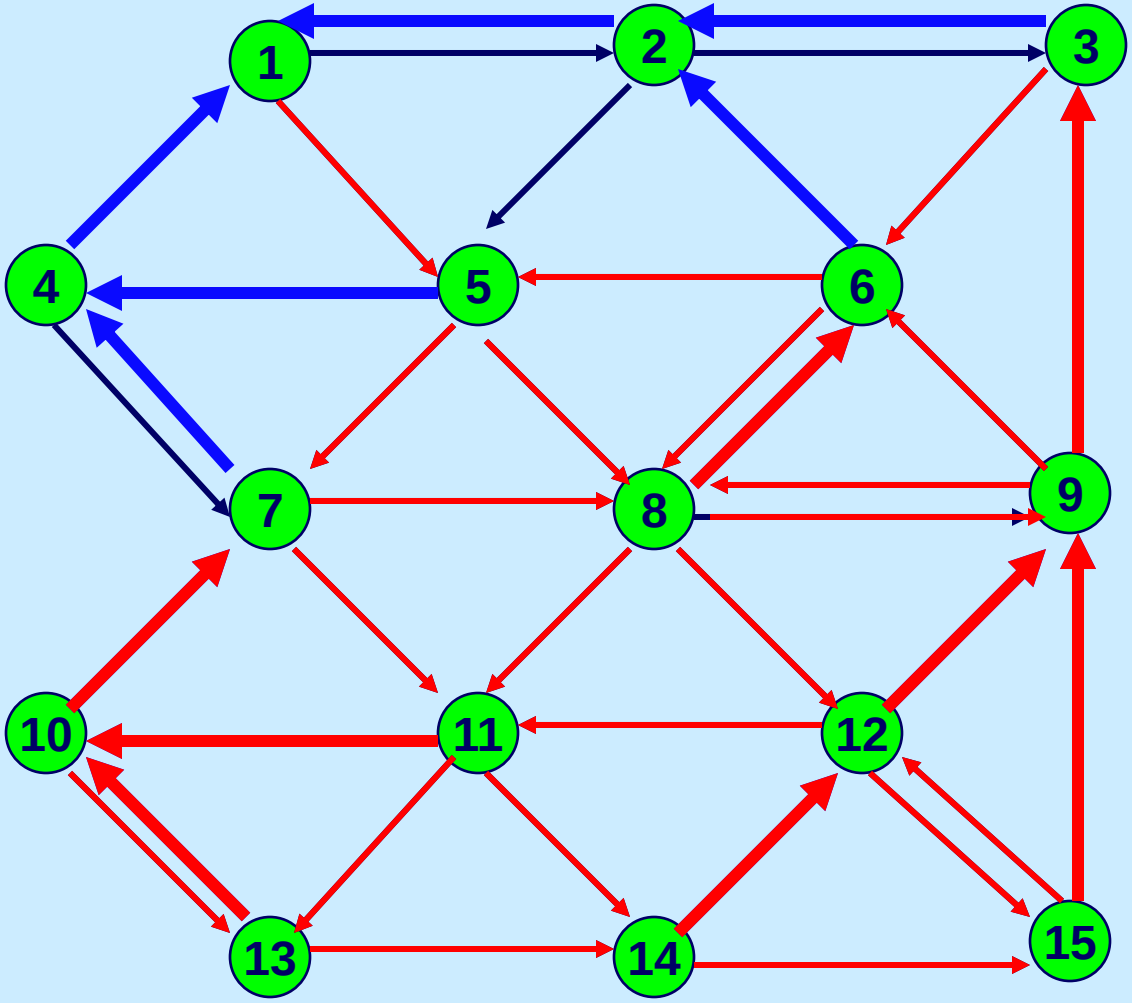
Visit nodes of A(j) in order.



Continue the walk

Continue the walk.

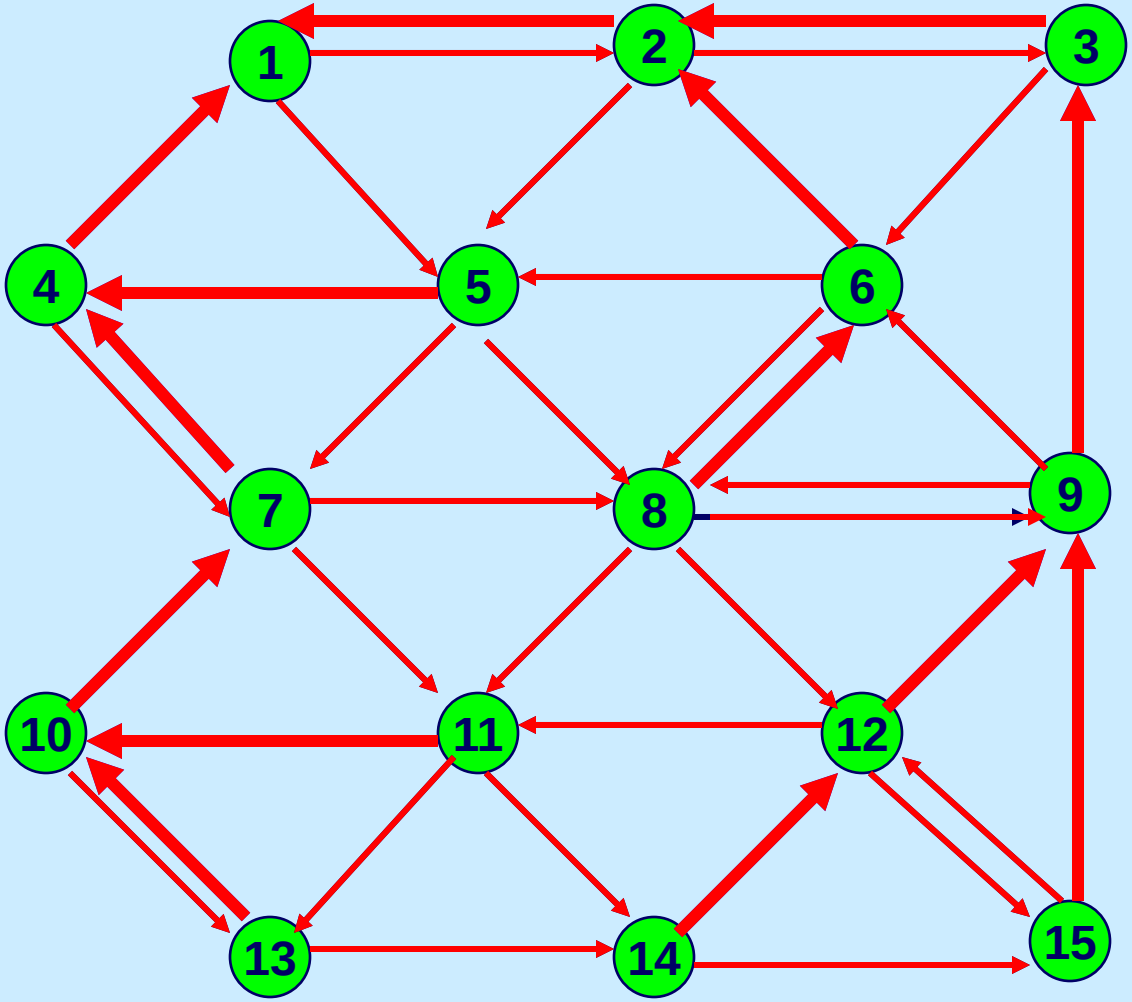
Visit nodes of A(j) in order.



Continue the walk

Continue the walk.

Visit nodes of A(j) in order.



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