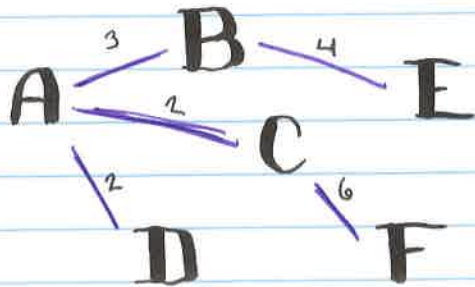# BREADTH FIRST SEARCH

$BFS(G(v,E),S): \in O(v^2)$

    $n = |V|$ $vg = map$ $N = \{\}$

    for $\forall v \in V:$ $-V$

        $vg[v] = FALSE$

    rof

    $vg[s] = TRUE$

    for $\forall x \in adj(s,G): -V^2$

        if not $vg[x]:$

            $vg[x] = true$

            $N = N \cup \{s, x\}$

        fi

    rof

    for $\forall x \in adj(s,G): -V^2$

        $BFS(G, x)$

    rof

    return N

end

RESULTING TREE: STARTING AT A

- GENERAL IDEA: GO THROUGH CHILDREN, THEN THEIR CHILDREN