To search for a k-node vertex cover in G:

  If G contains no edges, then the empty set is a vertex cover

  If G contains $> k$ $|V|$ edges, then it has no k-node vertex cover

  Else let $e = (u, v)$ be an edge of G

    Recursively check if either of $G - \{u\}$ or $G - \{v\}$

                has a vertex cover of size $k - 1$

    If neither of them does, then G has no k-node vertex cover

    Else, one of them (say, $G - \{u\}$) has a $(k-1)$-node vertex cover T

       In this case, $T \cup \{u\}$ is a k-node vertex cover of G

    Endif

  Endif