1. Show the graph associated with the matrix $A$ whose pattern is shown on the right.

\[
A = \begin{pmatrix}
1 & * & * \\
* & 2 & * \\
* & 3 & * & * \\
* & 4 & * \\
* & 5 & \\
* & * & 6
\end{pmatrix}
\]

2. Find a BFS ordering of the graph starting from node 1.

3. Read about the Cuthill McKee (CMK) ordering in the notes [a trivial variant of BFS]. Find the CMK ordering for $A$.

4. The reverse CMK ordering lists the nodes in the CMK ordering backward. Show the adjacency graph and the corresponding matrix $B$ reordered by the *reverse* Cuthill McKee ordering.