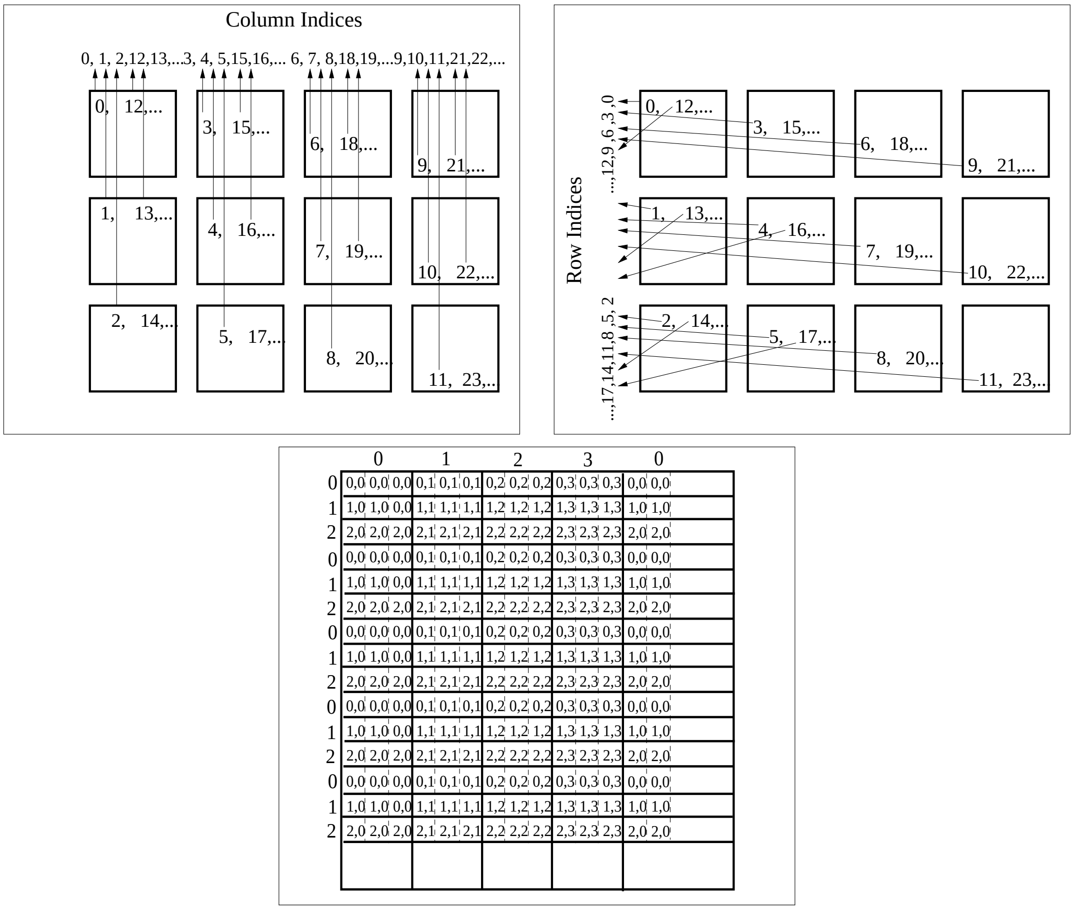


**Figure 1.2**
Inducing a matrix distribution from vector distributions when the vectors are over-decomposed. Top: The sub-vectors of $x$ and $y$ are assigned to a logical $3 \times 4$ mesh of nodes by wrapping in column-major order. By projecting the indices of $y$ to the left, we determine the distribution of the matrix row-blocks of $A$. By projecting the indices of $x$ to the top, we determine the distribution of the matrix column-blocks of $A$. Bottom: Distribution of the sub-blocks of $A$. The indices indicate the node to which the sub-block is mapped.