

The diagram illustrates the classification of 120 partitions of the set $\{1, 2, 3, 4, 5\}$ into two subsets. The root node is $5-4-3-2-1$. It branches into four nodes: $302P5-4-3-2-1$, $102P5-4-3-2-1$, $5-4-4-3-2-1$, and $5-4-3-3-2-1$. Each of these branches further into two nodes, and so on, until the final row contains 120 leaf nodes. Each node is labeled with a partition of $\{1, 2, 3, 4, 5\}$ and a corresponding partition of the set of partitions. The diagram is a visual representation of the lattice of partitions of a set.