Hints for exercise 2.2.33

1. Don't look for an explicit formula for $p_m(n)$. There isn't one.
2. Interpret in words what $p_m(n+1)$, $p_m(n)$, and $p_{m-1}(n)$ mean in the recursive formula given in the exercise.
3. Index the elements of the set $1, 2, \ldots, n+1$. For easier visualization, pretend they are lottery balls and your job is to put these in m boxes.
4. If you are puzzled by what the $p_{m-1}(n)$ is doing in the formula, recall the subsets of a partition are not supposed to be empty.