1. Verify that the operators corresponding to the combinatorial marking and composition constructions are the same for e.g.f.'s as for o.g.f.'s, i.e. for marking \( \hat{c}(z) = zD\hat{a}(z) \) and for composition \( \hat{c}(z) = \hat{a}(\hat{b}(z)) \).

2. Denote by \( b^{(r)}_n \) the number of partitions of the set \([n] = \{1, \ldots, n\}\) where each class contains at most \( r \) elements. (Each class must of course by definition be nonempty.) Determine for the sequence \( \langle b^{(r)}_n \rangle \) its exponential generating function \( \hat{b}^{(r)}(z) = \sum_{n \geq 0} b^{(r)}_n \frac{z^n}{n!} \).

3. Determine the e.g.f.'s for the classes of permutations where (a) all the cycles are of length three, (b) all the cycles are of even length.