



Memo No. _____

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3.3 Replace State Labels w/
Operators

$$|n_1 n_2 \dots \rangle = \prod_k \frac{1}{(n_k!)^{\frac{1}{2}}} (a_k^+)^{n_k} |0\rangle$$

Ex

$$|21000 \dots \rangle = \left[\frac{1}{\sqrt{2!}} (a_1^+)^2 \right] \left[\frac{1}{\sqrt{1!}} a_2^+ \right] |0\rangle$$

want a_{pm}^+ , easy soln is just $k \rightarrow pm$,
but we need to make sure not to
violate any symmetry, indeed.