## Generating Functions — Steps for solving recurrence equation .

The following are the steps for solving recurrence equation:

- $1 \rightarrow Write the recurrence equation first.$
- 2  $\rightarrow$  Convert the recurrence equation into a generating function.
- $3 \rightarrow Solve$  the generating function in terms of partial fractions.
- $4 \rightarrow Derive the closed form of G(z).$
- $5 \rightarrow Expand\ G(z)$  and the coefficient of  $z^n$  in the closed form is the solution of the recurrence equation.

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