$B.B.14. Transformation$

***Sometimes recurrences cannot be solved using the aforemetioned methods . For example, consider the following problem*:**

$$T(n) = T\left(\sqrt{n}\right) + n$$

$$T(n) = T\left(\frac{n}{2}\right) + n$$

***In this problem , many recurrences may involve terms that are not in the fixed range of n. That is , the recurrence equation may have powers, square roots, ceilings, floor or logarithms*.**

***Mostly non − linear recurrence equations involve powers*.**

It is necessary to convert a recurrence equation into a familiar form so that it can be solved . By applying some transformations involving logarithms , multiplicative terms , or other algebraic manipulations to a recurrence equation , it can be converted into the standard form.

The non − linear recurrence equations that are amenable to these kinds of transformations are called pseudo − nonlinear recurrences.

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