Assignment #7 due Monday 11/6

Exam 2 Monday 11/6 covering Assignments 4-7

and the accompanying Chapters: Induction, Recurrence, Catalan, Stirling.

* There will be one 2^{nd}-order linear homogeneous

recurrence to solve. $r_n = 2r_{n-1} - r_{n-2}$ or
(with power series)

$$\boxed{r_n = r_{n-1} + 6r_{n-2} \text{ with } r_0 = 2,\ r_1 = 5}$$

Where r_0 and r_1 are given.

* Inverse matrices with Stirling numbers or binomial coefficients.

Assignment #8 due Monday 11/13

Comments on Assignment #7

(2) $\Delta\left(\frac{a_n}{b_n}\right) = \frac{a_{n+1}}{b_{n+1}} - \frac{a_n}{b_n} =$ fill in this $\cdots = \frac{(\Delta a_n) b_n - (\Delta b_n) a_n}{b_n b_{n+1}}$

by definition of Δ

(3) Calculate $\Delta n 2^n$,
$\Delta^2 n 2^n$,
$\Delta^3 n 2^n$, and, if necessary,
$\Delta^4 n 2^n$

notice what $\Delta^k n 2^n$ should be in terms of n and k.

maybe use $\Delta(a_n b_n) = (\Delta a_n) b_{n+1} + (\Delta b_n) a_n$
or
$(\Delta b_n) a_{n+1} + (\Delta a_n) b_n$

(#1) After proving #1 a, b think about
a formula for $S(n, n-3)$, $s(n, n-3)$