

Math 232 HW 8

① Power series practise (§10.4 in text)

Useful facts: $\frac{1}{1-x} = 1 + x + x^2 + x^3 + \dots + x^n + \dots$

$$\frac{1}{(1-x)^2} = 1 + 2x + 3x^2 + \dots + (n+1)x^n + \dots$$

$$\frac{1}{(1-x)^3} = 1 + \frac{2 \cdot 3}{2}x + \frac{3 \cdot 4}{2}x^2 + \dots + \frac{(n+1)(n+2)}{2}x^n + \dots$$

Using these and the method of generating functions, solve the following recurrence relations:

(a) $a_{n+1} = a_n + 3^n$ $a_0 = 1$

(b) $a_{n+1} = 2a_n + 2^n$ $a_0 = 0$

(c) $a_{n+1} = a_n + n^2$ $a_0 = 1$

Also read through Examples 10.38 and 10.39 in the text!

② Other reading

Read §13.1 and §13.2 from text.

Now is a good time to review §12.1, 12.2, 12.3 !!

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③ Other problems from book
§ 12.3 : # 1

Supplementary exercises to Ch. 12 : #20

§ 13.1 : #2

§ 13.2 : # 1

← do only for your favorite one of
Kruskal's or Prim's algorithm!

(You'll have to work the algorithms
out yourself - we won't have
covered this section by
Wednesday!!)

} Write down
some steps
showing you're
really using
the algorithm,
not just
"commonsense"!