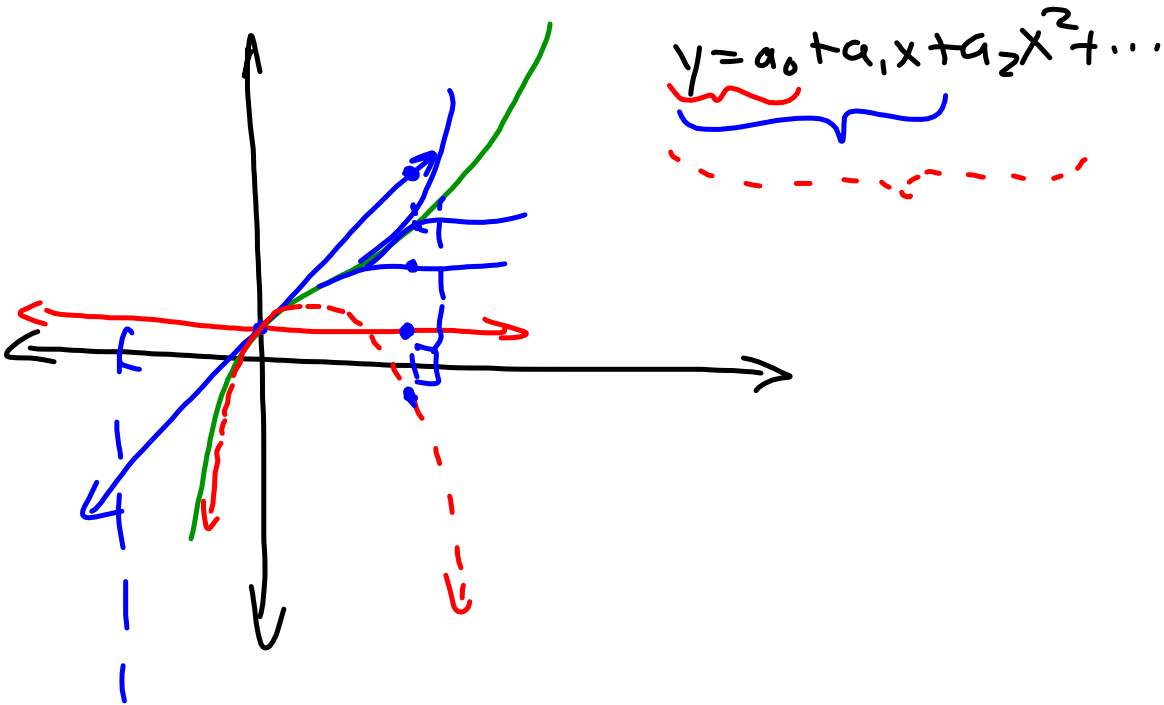
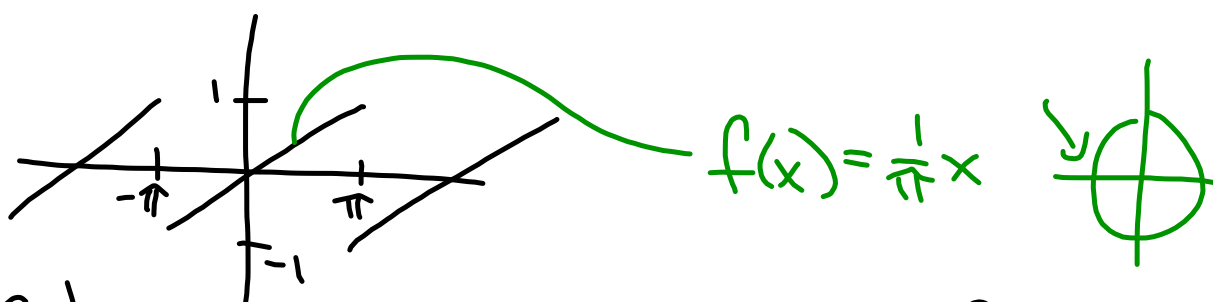






Goal

$$y = b_1 \sin x + b_2 \sin 2x + b_3 \sin 3x + \dots = \sum_{n=1}^{\infty} b_n \sin nx$$

$$b_n = \frac{1}{\pi} \int_{-\pi}^{\pi} f(x) \sin nx dx = \frac{1}{\pi^2} \int_{-\pi}^{\pi} x \sin nx dx = -\frac{2}{n\pi} \cos n\pi$$

$$y = \frac{2}{\pi} \sin x - \frac{2}{2\pi} \sin 2x + \frac{2}{3\pi} \sin 3x -$$

Final Here, Wed 10-12
bring packet + calculator

Focus On: Exam 1: 3-8, 9, 14

like Exam 2: 1-4

Exam 2: All, esp 1-4, 7, 8, 9

Exam 3: All, esp. 2, 5, 6, 8

Sum geom
partial sums

abs &
"reg"
convergence

ROC &
IOC
power series

To keep in mind:

* numerical series

$$\sum_{n=0}^{\infty} (n)$$

converges?

• div

geom or p

$n!$ - use ratio

$\sum_{n=0}^{\infty} \frac{1}{n!}$
 $\sum_{n=0}^{\infty} \frac{1}{2^n}$
 $\sum_{n=0}^{\infty} \frac{1}{n^2}$
 $\sum_{n=0}^{\infty} \frac{1}{n}$

* power series

$$\sum_{n=0}^{\infty} (n) x^n \text{ or } (x-c)^n$$

ROC, IOC

Want $\lim_{n \rightarrow \infty} | | < 1$
 if 0, conv for all x
 if ∞

Office Mon 10-1:45
Tues 10-2