18.01, September 29, 2003 Recitation Suggestions

1. Do curve-sketching. Labor + time intensive, but will come up on exam. $y = e^{-x}\cos(x)$ has a similar flavor to problem on PS2 (also they will see it again in physics/electronics classes when they do damped harmonic motion) $[-\frac{5\pi}{2}, \frac{5\pi}{2}]$ a good interval.

2. Other curve sketching problems from 2B-1, also 2B-5 is good (probably something similar on Exam 2).

3. Max-min problems. Show them again how to set the problem up.

4. Quick-easy problem: With a fixed length of fence, enclose an area on a wall as shown

L=2l+length semicircle-2l+πr

$$A = \frac{1}{2}(\pi r^2) + l \bullet 2r$$

Answer: L=πr, i.e. <u>all</u> semicircle, no straight put.

<u>Must</u> check endpts (also crit. pt in this example)

5. Other max-min problems. 2D-4 is a lot of fun and gives an explanation why honeycombs have a hexagonal shape (most efficient to minimize time b/w any two vertices on they honeycomb).