initial tests . . . .

1. Use the p-series test to determine whether or not the series converges.

$$\sum_{k=1}^{\infty} k^{-4/3} \qquad \sum_{k=1}^{\infty} \frac{1}{\sqrt[4]{k}} \qquad \sum_{k=1}^{\infty} \frac{1}{k^{\pi}}$$

$p =??$

conv/div?

2. What does the test for divergence tell you (or not tell you) about these series?

(a)

$$\sum_{k=0}^{\infty} \frac{k}{e^k} \qquad \lim_{x\to+\infty} \frac{x}{e^x} =$$

(b)

$$\sum_{k=0}^{\infty} \frac{\sqrt{k}}{\sqrt{k}+3} \qquad \lim_{x\to+\infty} \frac{\sqrt{x}}{\sqrt{x}+3} =$$

3. Use the integral test to determine whether or not the series below converges.

$$\sum_{k=0}^{\infty} \frac{1}{(4+2k)^{3/2}}$$

EXTRA CREDIT - use separate paper . . .

4. Use the integral test to determine the values of p for which the series below will converge.

$$\sum_{k=2}^{\infty} \frac{1}{k(\ln k)^p}$$