Thursday March 5. Covers Limits.

**Book**

11.1 p704  21, 23, 25, 27, 29, 33, 35, 41

11.2 p715  25, 29, 57, 59

11.3 p725  **Not Integral Test:**  3, 5, 7, 11, 15, 17, 25

11.4 p731  3, 5, 7, 9, 11, 15, 17, 19, 23, 25

**Problems**

This Week

Monday: I'll do summation notation, geometric series.

Tuesday: You'll work Limits problems.

Wednesday: I'll cover Integral test, p-test, comparison tests

Thursday: Everyone will take a quiz over Limits; only 11am class will be graded.

We'll work on comparison tests.

Friday: We'll look at root and ratio tests.

### Limits Practice

a) \[ \lim_{x \to \infty} \frac{(\ln x)^2}{x} \]

b) \[ \lim_{x \to \infty} \frac{\sqrt{x} + 1}{x} \]

c) \[ \lim_{x \to 0^+} \frac{1}{x} \ln(1 + x^2) \]

d) \[ \lim_{n \to \infty} \left( n^2 \right)^{\frac{2}{3}} \]

### Improper Practice

\[ \int_{2}^{\infty} \frac{\ln x}{x} \, dx \quad \int_{1}^{\infty} \frac{x^2 - 1}{(x^3 + 1)^2} \, dx \quad \int_{2}^{\infty} \frac{x^2 + 1}{x^3 - 1} \, dx \]

\[ \int_{1}^{\infty} \frac{x + 1}{x} \, dx \quad \int_{3}^{\infty} \frac{x + 1}{x^2 - x - 1} \, dx \quad \int_{1}^{\infty} \frac{x}{x - \ln x} \, dx \]

### Summation Practice

Write using summation notation

\[ \frac{x}{2} + \frac{x^2}{3} + \frac{x^3}{4} + \frac{x^4}{5} - \frac{x}{2} + \frac{x^2}{4} - \frac{x^3}{6} + \frac{x^4}{8} \]

\[ \frac{x^2}{2} + \frac{x^3}{4} + \frac{x^4}{8} + \frac{x^5}{16} \]

**Can we take a nap break?**