- Today: Integral and comparison tests.

- Homework before Wednesday's class: watch videos 13.13, as well as 13.14.

1. $\displaystyle\sum_{n=0}^{\infty} \frac{1}{p^n}$

2. $\displaystyle\sum_{n=0}^{\infty} \frac{1}{n^p}$

3. $\displaystyle\sum_{n=0}^{\infty} p^n$

4. $\displaystyle\sum_{n=0}^{\infty} n^p$

1. $\displaystyle\sum_{n}^{\infty} \frac{n^{10} + 17n^7 + 3}{n^{11}}$

2. $\displaystyle\sum_{n}^{\infty} \frac{\sqrt[3]{n^2 + 1} + 1}{\sqrt{n^4 + n} + n + 1}$

Slower questions: convergent or divergent?

1. $\displaystyle\sum_n^{\infty} \frac{2^n - 40}{3^n - 20}$

2. $\displaystyle\sum_n^{\infty} \frac{(\ln n)^{20}}{n^2}$

3. $\displaystyle\sum_n^{\infty} \sin^2 \frac{1}{n}$

4. $\displaystyle\sum_n^{\infty} \frac{1}{n(\ln n)^3}$

5. $\displaystyle\sum_n^{\infty} \frac{1}{n \ln n}$

6. $\displaystyle\sum_n^{\infty} e^{-n^2}$

We know

- $\forall n \in \mathbb{N}$, $0 < a_n < 1$.
- the series $\displaystyle\sum_n^\infty a_n$ is convergent

Determine whether the following series are convergent, divergent, or we do not have enough information to decide:

1. $\displaystyle\sum_n^\infty \sin a_n$ 2. $\displaystyle\sum_n^\infty \cos a_n$ 3. $\displaystyle\sum_n^\infty \sqrt{a_n}$