Reading Questions 3

1. If $\sum_{n=1}^{\infty} a_n$ is a series that converges then $\sum_{n=1}^{\infty} ka_n$ converges to $k \sum_{n=1}^{\infty} a_n$.
2. If $\sum_{n=1}^{\infty} a_n$ is a series that converges then $\sum_{n=2021}^{\infty} a_n$ converges as well.
3. Were there any explanations since the previous class which were unclear?

Section 9.3 Convergence of Series (Part 1)

Limits of Sequences of Partial Sums

P 1. We will learn many techniques for determining if infinite series converges or diverges. How can partial sums of an infinite series be used to determine if the series converges or diverges?

P 2. Make a list of techniques that determine if a series converges. Which of these techniques can be used to determine if the series diverges?

P 3. Suppose $\lim_{n\to\infty} a_n = 5$ and $\lim_{n\to\infty} b_n = 0$. Does $\sum_{n=1}^{\infty} a_n + b_n$ converge or diverge? Explain your answer.

P 4. Does the series $\sum_{n=1}^{\infty} \frac{n+1}{2n+3}$ converge or diverge?

P 5. Does the series $\sum_{n=1}^{\infty} \cos(n)$ converge or diverge?

P 6. Suppose $k \neq 0$. If $\sum_{n=1}^{\infty} a_n$ diverges does $\sum_{n=1}^{\infty} ka_n$ converges or diverge?

P 7. If $\sum_{n=1}^{\infty} a_n$ converges does $\sum_{n=1}^{\infty} a_{n+1} - a_n$ converges or diverge?