1. Ask student : piazza mid2
2. (Comparison test) Let and be real-valued sequences with for sufficiently large . Then converges implies converges (Slide 387)
3. (Root test) Let be a series of positive real numbers . **If such that** for all sufficiently large *k*, then converges; if for all sufficiently large *k*, then diverges (Slide 396)
4. (“Limit Version”) Let be a sequence of positive real numbers . Then

converges

diverges

(Slide 400) Comment. This is just the Root test, since such that . **No statement is possible if**

1. (Ratio test) Let be a series of strictly positive real numbers. If there is some such that for sufficiently large *k*, then converges; if for sufficiently large *k*, then diverges (Slide 402)
2. (“Limit Version”) Let be a series of strictly positive real numbers. Then

converge

diverges

(Slide 405)

1. (Ratio Comparison test) Let be two strictly positive real sequences. Suppose that converges. If for sufficiently large *k*, then converges (Slide 407) Comment. Proved by converting the condition to that of comparison test
2. (Raabe’s test) Let be a series of positive real numbers. Suppose there is some such that for sufficiently large *k*, then the series converges (Slide 408) Comment. Proved by using Bernoulli’s inequality
3. Mention Convolution