

**Sequences of Sequences (Lecture Assignment)**

Complete this assignment and submit it to Gradescope by 4:00pm on your class day. You can print this sheet, or write on your own paper. Contact us if internet connections or other issues require alternate arrangements.

For each sequence:

(a) Write out the first four numbers in the sequence.

(b) Determine whether the sequence converges (and if so, to what). Use correct notation, e.g. “ $\lim_{n \rightarrow \infty} \frac{1}{n} = 0$ .”

1.  $a_n = (-1)^n \frac{1}{\sqrt{n}}$

2.  $b_n = \sin\left(\frac{\pi n}{2n+1}\right)$

3.  $c_1 = 1, c_{n+1} = \frac{c_n}{2}$  for  $n > 1$ .

**One-Minute Questions:** Write a sentence for each.

A. What's one mathematical question you have after watching the videos?

B. What's one interesting thing you learned from the book or videos?