MATH 10
ASSIGNMENT 15: MORE PROBLEMS WITH LIMITS
FEBRUARY 9, 2020

We spent most of the time finishing previous assignment. Here are some more problems with limits for you to do a short review before the next class.

1. Show that, if the sequence a_n has limit A, then any sequence obtained by rearranging the sequence a_n also has limit A.

2. Show that, if A is an accumulation point of the sequence a_n, then one can find a subsequence of a_n which has limit A.

3. On a line, construct the sequence of points $\{p_n\}$ according to the following rule. Choose the first two points randomly, and take each subsequent point to be the midpoint of the segment joining the two previous points. Show that the limit of the sequence $\{p_n\}$ exists and find it.