

Lecture 12 - Highlights

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Thm: Every sequence s_n has a monotonic subsequence.

MAJOR THM #1: Archimedean Property

#2: \mathbb{Q} is dense in \mathbb{R}

#3: All bounded, monotone seq. converge

#4: Cauchy iff convergent

← MAJOR THEOREM 5

Thm (Bolzano-Weierstrass): Every bounded sequence has a convergent subsequence.

One more example of subsequences...

$$s_n = (1, \frac{1}{2}, 3, \frac{1}{4}, 5, \frac{1}{6}, \dots)$$

$$n_k = (3, 7, 8, 250, \dots)$$

$$s_{n_k} = (3, 7, \frac{1}{8}, \frac{1}{250}, \dots)$$