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Assignment 8

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### Homework #8

If a sequence of p.m.'s converges vaguely to an atomless p.m., then the convergence is uniform for all intervals, finite or infinite.

*Proof.* Let  $\{\mu_n\}$  be a sequence of probability measures that converge vaguely to an atomless probability measure  $\mu$ . Since  $\mu$  is atomless, we have that for all intervals  $(a, b]$  with finite  $a$  and  $b$ ,

$$\mu_n(a, b] \rightarrow \mu(a, b]$$

□