Last time

1. We defined convergence in measure: $\{f_n\}$ converges in measure to f if for all $\varepsilon > 0$

$$\lim_n \mu(\{x \in \Omega \mid |f_n(x) - f(x)| > \varepsilon\}) = 0$$

2. We compared the notions pointwise convergence almost everywhere and convergence in measure.
3. Looked more examples of how to compute with the Lebesgue integral.
4. Useful techniques:
   4.1 If f is positive or integrabel then

$$\int_{\mathbb{R}} f \, d\lambda = \lim_n \int_{[-n,n]} f \, d\lambda.$$

   4.2 If f is continuous then

$$\int_{[a,b]} f \, d\lambda = \int_a^b f(x) \, dx.$$

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   2.1 normed spaces,
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