

**Beals, page 25 #6:** Let  $f_n : \mathbb{R} \rightarrow \mathbb{R}$  be the ‘tent’ function.

$$f_n(x) = \begin{cases} n^2 x & \text{if } 0 \leq x \leq 1/n \\ 2n - n^2 x & \text{if } 1/n \leq x \leq 2/n \\ 0 & \text{otherwise} \end{cases}$$

Then

$$\liminf \int f_n(x) = \liminf 1 > 0 = \int 0 = \int \lim f_n = \int \liminf f_n.$$