



CONTINUOUS LINEAR FUNCTIONALS

Why

We can characterize the continuous linear functionals.

Main result

Proposition 1. *Let F be a linear functional on a normed space $(V, \|\cdot\|)$. The following are equivalent:*

1. *F is continuous;*
2. *F is continuous at 0 ;*
3. $\sup_{\|x\| \leq 1} \{|F(x)|\} < \infty$.¹

For this reason we often call *continuous linear functionals* the *bounded linear functionals* or call them *continuous bounded linear functionals*.

¹Future editions will include an account, and that will fill out this sheet.

