1116-S5-1464   **Erik Talvila*** (`erik.talvila@ufv.ca`). *Continuous functions in the extended real plane.* Preliminary report.

The extended real line is $\overline{\mathbb{R}} = [-\infty, \infty]$. A function $f : \overline{\mathbb{R}} \to \mathbb{R}$ is continuous if and only if it is continuous on $\mathbb{R}$ and has real limits at ∞ and $-\infty$. The topology of $\overline{\mathbb{R}}^2$ is more complicated. If the double integral $\int_{-\infty}^{\infty} \int_{-\infty}^{\infty} g(s,t)\,dsdt$ exists then the function $f(x,y) = \int_{-\infty}^{x} \int_{-\infty}^{y} g(s,t)\,dsdt$ is a common example of such a function. (Received September 20, 2015)

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