necessary and sufficient conditions for a normed vector space to be a Banach space

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Author	asteroid (17536)
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Theorem 1 - Let $(X, \|\cdot\|)$ be a normed vector space. X is a Banach space if and only if every absolutely convergent series in X is convergent, i.e., whenever $\sum_n \|x_n\| < \infty$, $\sum_n x_n$ converges in X.

Theorem 2 - Let X, Y be normed vector spaces, $X \neq 0$. Let $B(X, Y)$ be the space of bounded operators $X \longrightarrow Y$. Then Y is a Banach space if and only if $B(X, Y)$ is a Banach space.