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Title: Study of Absolute Values

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Abstract: The notion of an absolute value of a field K is a generalization of the notion of ordinary absolute value of the field \mathbb{C} of complex numbers. A real valued function defined on a field K into non-negative real numbers is called absolute value of K if $|x| = 0$, $x = 0$; $|xy| = |x| |y|$ and $|x + y| \leq |x| + |y|$; $y \in K$. In this thesis, we study absolute values and its basic properties and some significant results like Ostrowski's Theorem, Approximation Theorem and Independence Theorem. We also discuss Archimedean and non-Archimedean absolute values, completion of fields with respect to absolute values. A non-Archimedean absolute value gives rise to what is called (additive) valuation. A detailed exposition of discrete valuations is brought out. We also study Hensel's Lemma and some of its applications.

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