$Hf \in Hv(f)v(H)$

2Let $k \subseteq$ be a field and G an ordered abelian group. Let $K = k((G))$ be the field of generalized power series endow

[(a)]Verify that $v(^{\times}) \cong G$. Let $s = \sum_{g\in G} s(g)t^g \in \mathcal{O}_v$. Show that for the residue $\overline{s}$ of s we have $\overline{s} = s\big(v(s)\big)$. Conclude t

for $\alpha \in^{>0}$ and $(\alpha)_n := \alpha \cdot (\alpha - 1) \cdots (\alpha - n + 1)$. Then prove that for $\varepsilon \in$ with $v(\varepsilon) > 0$ we have $(1+\epsilon)^{\frac{1}{2}} = \sqrt{1+\varepsilon}$.

Definition:

[(a)]Let G be an abelian group and $p \in$ prime. G is called p divisible if for every $g \in G$ there exists $h \in G$ such that $g =$

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