

Definition 9.146. *[OXG] For $n \in \mathbb{Z}, n \neq 0$ we define*

$$\varphi_p(n) = \max\{h \in \mathbb{N}, p^h \text{ divides } n\} .$$

*Let's also define $\varphi_p(0) = \infty$. This φ_p is known as *p-adic valuation* [54].*