



$$d^p \underline{\mathbb{Z}}^m = d \underline{\mathbb{Z}}^m + {}^{-p} \underline{\mathbb{Z}}^m d$$

$$\begin{aligned}
 \text{Ind } \underline{\mathbb{Z}}^m d^p \underline{\mathbb{Z}}^m &= \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m - d \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m = \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m + \underline{\mathbb{Z}}^m \text{Ind } \underline{\mathbb{Z}}^m - d \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m - {}^{-p} \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m d \\
 &= \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m - \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m - {}^{p-1} \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m d - {}^{-p} \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m d + \underline{\mathbb{Z}}^m \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m - \underline{\mathbb{Z}}^m \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m \\
 &= \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m + \underline{\mathbb{Z}}^m \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m + {}^{p+1} \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m d + {}^{-p} \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m d = \text{Ind } \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m + {}^{-p} \underline{\mathbb{Z}}^m \underline{\mathbb{Z}}^m d
 \end{aligned}$$