Correction to Semicontinuity for the Local Hilbert Function

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The inequalities $S_{X,y} \leq \Delta^r S_{X,x}$ in Theorems 1.5 and 3.2 are false for $r \geq 2$. In fact, the given proofs of these theorems show that we have only the weaker inequality

$$\Delta^{-r+1} S_{X,y} \leq \Delta S_{X,x}$$

or equivalently,

$$\Delta^{-r} H_{X,y} \leq H_{X,x}$$

Therefore, the corrected theorems are:

Theorem 1.5. *Let Y be a regular r -dimensional closed subscheme of $X = \operatorname{Spec} \mathcal{O}$ defined by a prime ideal p (i.e., $\mathcal{O}/p$ is a regular local ring of dimension r) and let y be the generic point of Y . Then*

$$\Delta^{-r} H_{X,y} \leq H_{X,x}.$$

Theorem 3.2. *Let Y be an excellent r -dimensional integral closed subscheme of $X = \operatorname{Spec} \mathcal{O}$, and let y be the generic point of Y . Then*

$$\Delta^{-r} H_{X,y} \leq H_{X,x}.$$

These changes do not affect the rest of the paper.