

- (0.1) Show that, if $f_1, \dots, f_n \in R$ where R is a commutative ring, then $\text{Tot}(K(f_1, \dots, f_{n-1}) \otimes K(f_n)) \cong K(f_1, \dots, f_n)$.
- (0.2) Show that, if I is an ideal of R , then $\text{Ext}_R^i(R/I, R) \cong \text{Ext}_R^{i-1}(I, R)$ for $i \geq 1$.
- (0.3) Show that, if F is a right-exact functor and

$$\cdots \longrightarrow C_2 \longrightarrow C_1 \longrightarrow C_0 \longrightarrow A \longrightarrow 0$$

is an acyclic chain complex that satisfies $(\mathbb{L}_i F)(C) = 0$ for all $i > 0$, then $(\mathbb{L}_i F)(A) = H_i(FC)$, for all $i \geq 0$. [Hint: comparison lemma?]