Free Resolutions Over a Complete Hypersurface (And Friends)

Based on "Homological algebra on a complete intersection, with an application to group representations." by David Eisenbud

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Notation & Motivation

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Such a B is a *complete intersection of codimension n.*
We shall study the structure of B-free resolutions of B-modules, relating these to their liftings to A.

Clarification: B-Free

We do **NOT** mean...

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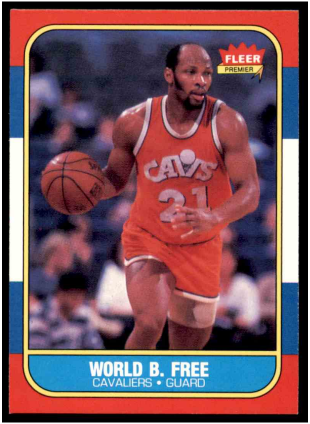

Figure: Another "B-Free" Object.

Set-up

Let M be a B-module, and $\mathbf{F}$ a free resolution of B.

$$\mathbf{F} : \ldots \xrightarrow{\partial_3} F_2 \xrightarrow{\partial_2} F_1 \xrightarrow{\partial_1} F_0 \xrightarrow{\partial_0} 0$$

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Let $\tilde{\partial}_i$ denote an arbitrary lifting of