

1102-13-77

Thomas Marley and **Marcus Webb*** (mwebb4@math.unl.edu). *The Frobenius Functor and Flat and Injective Dimension.*

We investigate the action of the Frobenius functor on flat and injective resolutions. We show that a result of Peskine and Szpiro for modules of finite projective dimension extends to modules of finite flat dimension and use this to extend a result of Marley characterizing the Gorenstein property in terms of the Frobenius functor. We also show by example that, unlike the projective case, the Frobenius functor need not preserve the finiteness of the injective dimension of a finitely generated R -module - even if $F_R(I) \cong I$ for every injective module I . (Received July 17, 2014)