

Title: On (m, n) -injectivity and coherence of rings

Author(s): Qionglu Liu and Jianlong Chen

Let R be a ring. For two positive integers m and n , R is said to be left (m, n) -injective if every left R -homomorphism from an n -generated submodule of ${}_R R^m$ to ${}_R R$ extends to one from ${}_R R^m$ to ${}_R R$. The ring R is called left coherent if each of its finitely generated left ideals is finitely presented. The aim of this article is to investigate (m, n) -injectivity and the coherence of the ring $R[x]/(x^k)$ ($k \geq 1$). Various sufficient and necessary conditions are obtained for $R[x]/(x^2)$ to be left (m, n) -injective and for $R[x]/(x^k)$ ($k > 2$) to be left P -injective. Moreover, it is proved that R is left coherent if and only if $R[x]/(x^k)$ is left coherent for every $k \geq 1$ if and only if $R[x]/(x^k)$ is left coherent for some $k \geq 1$.

Address:

Qionglu Liu
Department Of Mathematics
Southeast University
Nanjing, Jiangsu, 210096
P.R. China

Address:

Jianlong Chen
Department Of Mathematics
Southeast University
Nanjing, Jiangsu, 210096
P.R. China