## Fall 2019, Math 620: Preliminary Problem Set 11

Due: Tuesday, November 19th, 2019
Introduction to Modules

Preliminary problems. These problems should be completed before discussion on Thursday.
(P1) Fix a ring $R$. Write down the axioms for a right $R$-module $M$.
(P2) Let $R=\mathbb{Q}[x, y]$. Write down 3 distinct bases for $R^{3}=R \oplus R \oplus R$.

