Math 5010 - Spring 2023 (Prof. Kinser) - Quiz 2

You may assume we already know the definition of a left R-module.

1. (2 points) Let $M_1, M_2, \ldots, M_k$ be a collection of R-modules. State the definition of the *direct product* of $M_1, M_2, \ldots, M_k$, denoted $M_1 \times M_2 \times \ldots M_k$. Don't forget to state how the module structure works.

2. (3 points) State the definition of a *free module*: An R-module F is said to be *free* on a subset $A \subseteq F$ if...