

MATH 5010 - SPRING 2023 (PROF. KINSER) - QUIZ 3

You may assume we already know the definition of an R -module and an F -vector space.

1. (2 points) State the definition of exactness: A pair of homomorphisms $X \xrightarrow{\alpha} Y \xrightarrow{\beta} Z$ is said to be *exact* if...
2. (2 points) A subset S of a vector space V is a set of *linearly independent* vectors if... (any equivalent definition is fine)
3. (1 point) Let V be a vector space over a field F , and let ϕ be an n -multilinear form on V . Assuming we know the definition of that, define what it means for ϕ to be alternating.