# 7210 HW 7

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**Problem 1** (D&F 7.1.30)**.** *Let $A = \mathbb{Z} \times \mathbb{Z} \times \cdots$ be the direct product of copies of $\mathbb{Z}$ indexed by the positive integers (so $A$ is a ring under componentwise addition and multiplication) and let $R$ be the ring of all group homomorphisms from $A$ to itself with addition pointwise and multiplication defined as function composition. Let $\phi$ be the element of $R$ defined by $\phi(a_1, a_1, a_3, \dots)$*

*1.*

**Problem 2** (D&F 7.3.29)**.**

**Problem 3** (D&F 7.3.33)**.**

**Problem 4** (D&F 7.4.15)**.**

**Problem 5** (D&F 7.4.27)**.**

**Problem 6** (D&F 7.4.30)**.**

**Problem 7** (D&F 7.4.37)**.**