Math 254B. Homework #6

Due Friday 20 March, in class

1. Do Exercise 2 on page 314.

2. Let $G$ be a finite cyclic group and let $k$ be a field (not necessarily finite). Let

$$A = \bigoplus_{\sigma \in G} k,$$

where the action of $G$ on $A$ is by permuting the coordinates:

$$(a_{\sigma})_{\sigma \in G}^\tau = (a_{\sigma \tau})_{\sigma \in G}.$$

Show by explicit computation (and without using Ind) that $h(G, A) = 1$.

3. Let $G$ be a finite cyclic group and let $A$ be a finite $G$-module. Show that $h(G, A) = 1$. 