

Reading Quiz §0 & 2

1. [2] Create an equivalence relation on the set $\{0, a, b, c\}$. Identify all the equivalence classes.

2. [1] Give an example of a set and binary operator that does not form a group. Explain what group properties are not met.

3. [2] Consider the set $\{1, i, j, k, -1, -i, -j, -k\}$ along with a binary operator defined by the following Cayley table. Does this form an abelian group? Justify your answer (but you can assume the operator is associative!).

*	1	i	j	k	-1	-i	-j	-k
1	1	i	j	k	-1	-i	-j	-k
i	i	-1	-k	j	-i	1	k	-j
j	j	k	-1	-i	-j	-k	1	i
k	k	-j	i	-1	-k	j	-i	1
-1	-1	-i	-j	-k	1	i	j	k
-i	-i	1	k	-j	i	-1	-k	j
-j	-j	-k	1	i	j	k	-1	-i
-k	-k	j	-i	1	k	-j	i	-1