1. Determine if the following sets along with the given operations form groups.

If so, determine the identity element and if they are Abelian. If not, explain why.

(i) where is matrix multiplication.

(ii) where is function composition.

(iii) Let be the set of all functions of the form where and let be composition.

This is called the one-dimensional Afiine group.

(iv) where is .

(v) Let where is complex multiplication.

is called the circle group.