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) $GL(2,Z)$ where $\*$ is matrix multiplication.

 (ii) $Sym\left(R\right)$ where $\*$ is function composition.

 (iii) Let $Aff(1,R)$ be the set of all functions $f:R\rightarrow R$ of the form $f\_{a,b}\left(x\right)=ax+b$ where $a, b\in R $and let $\*$ be composition.

 This is called the one-dimensional Afiine group.

 (iv) $Z\_{n}$ where $\*$ is $⨀$.

 (v) Let $T≔\{z\in C :\left|z\right|=1\}$ where $\*$ is complex multiplication.

 $T$ is called the circle group.