Discrete Mathematics – Test2

1. Please show that $<Z,+>$ is infinite cyclic group, and -1 is a generator of Z.

2. The group $<Z_6,+_6>$, $B_1=\{2\}$, $B_2=\{2,3\}$. To compute $<B_1>$ and $<B_2>$.

3. Let G is a group, $H \le G$, then $a \in Hb \Leftrightarrow ab^{-1} \in H \Leftrightarrow Ha = Hb$.

4. $\sigma=\begin{pmatrix} 1 & 2 & 3 & 4 \\ 4 & 3 & 1 & 2 \end{pmatrix}$ and $\tau=\begin{pmatrix} 1 & 2 & 3 & 4 \\ 2 & 3 & 4 & 1 \end{pmatrix}$. To compute $\sigma\tau$ and $\tau\sigma$.

5. Consider the cycles (25143) and (462). To compute $(462)(25143)$.