## Math 4400 Group theory worksheet

$D_{6}=\{$ symmetries of the triangle $\}=\{I, R, T, a, b, c\}$, where


Complete the following "multiplication table" for $D_{6}$. Multiply on the left by the element of $D_{6}$ corresponding to the row and multiply on the right by the element corresponding to the column. For instance, the cell in row "a" and column " R " should contain the element $a R=b$

|  | $I$ | $R$ | $T$ | $a$ | $b$ | $c$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $I$ | $I$ | $R$ | $T$ | $a$ | $b$ | $c$ |
| $R$ | $R$ |  |  |  |  |  |
| $T$ | $T$ |  |  |  |  |  |
| $a$ | $a$ | $b$ |  |  |  |  |
| $b$ | $b$ |  |  |  |  |  |
| $c$ | $c$ |  |  |  |  |  |

