ACTION OF $G=<u,v:u^3=v^3=1>$ ON IMAGINARY QUADRATIC FIELDS

The imaginary quadratic fields are defined by the set $\{a+b\sqrt{-n}:a,b\in Q\}$ and denoted by $Q(\sqrt{-n})$, where n is a square-free positive integer. In this chapter we have proved that if $\alpha=\frac{a+\sqrt{-n}}{c}\in Q^*(\sqrt{-n})=\{\frac{a+\sqrt{-n}}{c}:\ a,\frac{a^2+n}{c},c\in Z,c\neq 0\}$ then n does not change its value in the orbit αG, where $G=<u,v:u^3=v^3=1>$. Also we show that the number of orbits of $Q^*(\sqrt{-n})$ under the action of G are $2[d(n)+2d(n+1)-4]$ and $2[d(n)+2d(n+1)-6]$ according to n is even or odd, except for $n=3$ for which there are exactly eight orbits. Also, the action of G on $Q^*(\sqrt{-n})$ is always intransitive.