S20=SymmetricGroup(8)

R=S20("(1,2,3,4,5,6,7,8)")

T=S20("(1,4)(2,3)")

OT=S20.subgroup([R,T])

# verifying the 2-cycle move

print (T\*R^(3))^(4)

print (T\*R^(-1))^(5)