

1116-VN-1591      **Dominic Lanphier\***, Department of Mathematics, 1906 College Heights Blvd., Bowling Green, KY 42101, and **Mahannah El-Farrah**, Department of Mathematics, 1906 College Heights Blvd., Bowling Green, KY 42101. *Subgroups of Cyclic Groups and Values of the Riemann Zeta Function.*

The average order of the elements of a cyclic group have been well-studied in recent years. We consider the average order of the subgroups of a cyclic group which are generated by a fixed number of elements. Values of the Riemann zeta function arise in expressing the expected size of such subgroups. (Received September 20, 2015)