Brendan W Sullivan* (sullivanb@emmanuel.edu), Emmanuel College, 400 The Fenway, Boston, MA 02115, and Nikolas Townsend and Mikayla Werzanski. Cops and Robbers meets Chess.

In the game of Cops and Robbers, a team of Cops pursues an evasive Robber. The sides alternate turns, with legal moves specified by some underlying graph of nodes and edges. The Cops win if there exists a strategy whereby they capture the Robber in finite time; otherwise, the Robber wins by indefinitely escaping. In general, one seeks the “Cop number” of a graph, the minimum number of Cops required to guarantee victory.

Here, we present results about this game when the Cops and Robber are allowed to move like specified chess pieces on an $n \times n$ board. We investigated Bishops, Rooks, and Queens. More specifically, we analyzed differences between the standard game and the so-called “Lazy Cops” variant, wherein only one Cop may move when it is the Cops’ turn. We show that the Cop number for Bishops and Rooks is 2 for any $n$, whereas $n$ Lazy Cops are required. We demonstrate a similar relationship for Queens: For ordinary Cops, 3 suffice as long as $n \leq 7$, and 4 suffice for any $n$. (We also show that 4 are required as long as $n \geq 19$.) Meanwhile, the Lazy Cop number grows with $n$, bounded between $n/3$ and $n/2$. We conclude by posing some related conjectures and open problems. (Received September 20, 2015)