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Given two positive integers n and k such that $k < n/2$, the Generalized Petersen graph $GP(n, k)$ has vertex set $\{a_1, \dots, a_n, b_1, \dots, b_n\}$ and edges of the form $\{a_i, b_i\}$, $\{a_i, a_{i+1}\}$, and $\{b_i, b_{i+k}\}$ for each $i = 1, \dots, n$, where indices are read modulo n . We prove that the cop number of any Generalized Petersen graph is less than or equal to 4. It has been verified with a computer that this bound is realized in some examples, for instance $GP(40, 7)$. The idea of the proof is to pass to an infinite cyclic covering space. It is shown that in a modified game of cops and robbers two preimages of cops suffice to push a preimage of a robber an arbitrary distance in the positive direction. The result follows by projecting the modified game back down to $GP(n, k)$. Additionally, we generalize this construction to show that the cop number of any I -graph is less than or equal to 5. (Received July 30, 2014)