

January M6 Problem

n and k are relatively prime positive integers with $k < n$. The numbers 1 through $n-1$ are colored according to the following rules:

For any integer i , with $0 < i < n$, the numbers i and $n-i$ are colored the same color.

For any integer i , with $0 < i < n$ and $i \neq k$, the numbers i and $|k-i|$ are colored the same color.

This month's problem has two parts. The first is to prove that all the numbers from 1 to $n-1$ are the same color. The second part is to determine that color.

Submissions will be accepted until Feb 15th.
