For a cancellation graph $G$, the property holds that for any graph $C$ in the direct product $G \times C \cong X \times C$, it follows that $G \cong X$. We will discuss a characterization of all bipartite cancellation graphs. In fact, we will characterize all solutions $X$ for bipartite $G$ in $G \times C \cong X \times C$.

The factorial of graph $G$ denoted by $G!$ is a digraph on the permutations of graph $G$. We will describe the factorial and its role in characterizing the solutions $X$ for $G \times C \cong X \times C$. We will finish by discussing the open problem of characterizing the non-bipartite cancellation graph $G$ and looking at some examples.