Abstract. The prime vertex graph, $\Delta(X)$, and the common divisor graph, $\Gamma(X)$, are two graphs that have been defined on a set of positive integers $X$. Some properties of these graphs have been studied in the cases where either $X$ is the set of character degrees of a group or $X$ is the set of conjugacy class sizes of a group. In this paper, we gather some results on these graphs arising in the context of direct product of two groups.