

Counting multigraph pairs of orders 2 and 3

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Let λK_n be the complete λ -fold multigraph of order n . Let G and H be multigraphs on n vertices. We call (G, H) a λ -fold multigraph pair of order n if all of the following hold:

1. G and H have no isolated vertices,
2. $G \not\cong H$, and
3. $E(G) \cup E(H) = E(\lambda K_n)$.

Shown are the general results for finding how many λ -fold multigraph pairs there are on both 2 and 3 vertices, by finding generating functions with respect to λ .