We continue our work with skeletal graph pairs \((G, \mathcal{G})\), more specifically the new concept of vertex pasted skeletal graph pairs and explore how this concept can be used to determine \(Z(G)\) by considering the vertex induced subgraphs \(\mathcal{G} = \{G_i\}_{i=1}^n\) given by a partition of the graph’s vertices. Viewing each vertex induced subgraph as a single vertex we construct a new graph called the skeleton \(S\). We then examine which properties of \(S\) and \(\mathcal{G}\) can be used to determine bounds and even precise values for \(Z(G)\), compare these results to those of the more restrictive edge adjoined skeletal graph pairs, and finally introduce some new classes of graphs for which the developed theorems yield immediate results.

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