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Yaping Mao, Christopher Melekian* (ccmeleki@oakland.edu) and **Eddie Cheng**. *The Steiner $(n - 3)$ -diameter of a graph.*

The notion of Steiner distance, introduced by Chartrand, Oellerman, Tian, and Zou in 1989, is a natural generalization of classical graph distance. Given a connected graph G and a subset S of its vertices, the *Steiner distance* of S , denoted by $d(S)$, is the minimum size of a connected subgraph spanning S . Furthermore, for any k with $2 \leq k \leq |V(G)|$, the *Steiner k -diameter* of G , $sdiam_k(G)$, is the maximum value of the Steiner distance over all vertex subsets of cardinality k . In 2011, Chartrand, Okamoto, and Zhang showed that $k - 1 \leq sdiam_k(G) \leq n - 1$ for a graph on n vertices. In this paper, we characterize the graphs satisfying $sdiam_k(G) = \ell$ for $k = n, n - 1, n - 2, n - 3$ and $k - 1 \leq \ell \leq n - 1$. (Received July 27, 2017)