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Eric A Swartz* (eric.swartz@uwa.edu.au), The University of Western Australia, School of Mathematics and Statistics, 35 Stirling Highway, Crawley, WA 6009, Australia. *New examples of strongly regular Cayley graphs.*

A graph Γ that is regular of degree k is said to be strongly regular if there exist integers λ and μ such that every two adjacent vertices have exactly λ common neighbors and every two nonadjacent vertices have exactly μ common neighbors. Given a group G and a subset S of elements of G, the Cayley graph $\mathrm{Cay}(G, S)$ has vertex set the elements of G, and $g, h \in G$ are adjacent vertices in $\mathrm{Cay}(G, S)$ if and only if $gh^{-1} \in S$. If for all $g \in S$ we have $g^{-1} \in S$, then $\mathrm{Cay}(G, S)$ is undirected. Very few examples of strongly regular Cayley graphs are known, and there are especially few known arising from nonabelian groups. In this talk, a new strongly regular Cayley graph $\mathrm{Cay}(G, S)$ is constructed for each extraspecial group of order p^3 and exponent p^2, where p is an odd prime, and a new general approach to finding these graphs is discussed. No previous knowledge of these topics will be assumed. (Received September 17, 2013)