

1035-05-479

Steve Butler* (sbutler@math.ucsd.edu), Dept. of Mathematics, UC San Diego, La Jolla, CA 92093-0112. *Induced-universal graphs for graphs with bounded degree.*

A graph U is said to be induced-universal for a family of graphs if every graph in the family is an *induced* subgraph of U . We give a construction for an induced-universal graph for the family consisting of simple graphs on n vertices with maximum degree at most r . This graph has $Cn^{\lfloor (r+1)/2 \rfloor}$ vertices and $Dn^{2\lfloor (r+1)/2 \rfloor - 1}$ edges, where C and D are constants depending only on r . This construction is nearly optimal when r is even in that such an induced-universal graph must have at least $cn^{r/2}$ vertices for some c depending only on r . We also will consider similar constructions for other types of graphs such as multigraphs and directed graphs. (Received September 08, 2007)