CORR 2001-24

The Largest non-integer Zero of Chromatic Polynomials of Graphs with Fixed Order

F.M. Dong*

Abstract   For any simple graph G, let $P(G, \lambda)$ denote the chromatic polynomial of G. In this paper, we determine the largest non-integer real zero of $P(G, \lambda)$ over all graphs G with n vertices. It shows that $P(G, \lambda)$ has no non-integral zeros in the interval $(n - 3, +\inf)$. But for any $\epsilon > 0$, when n is large enough, there is a graph H with n vertices such that $P(H, \lambda)$ has a real zero in $(n - 3 - \epsilon, n - 3)$.

Keywords   graph, chromatic polynomial, zero