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Oguz Kurt* (oguz@math.ohio-state.edu), 231 W 18th Ave, Columbus, OH 43210. *Finding New Elementary Sets from Old Ones.*

In 1967, Gupta conjectured that $\chi'(G) - \chi^*(G) < 1$ provided that $\chi'(G) > \Delta(G) + 1$ where Δ, χ' and χ^* are the maximum degree, the chromatic index and the fractional chromatic index of G , respectively. This conjecture was later named as Goldberg Conjecture since Goldberg conjectured the same problem in 1974. We introduce some new methods and terminology that are useful toward the proof of this conjecture. We also prove that $\chi' - \chi^* < 1$ provided that $\chi' > \frac{21}{20}\Delta + \frac{18}{20}$. This result is an improvement to the previously best known linear result toward the proof of Goldberg Conjecture. (Received September 07, 2009)