1077-05-1042 **Gaku Liu*** (xueliu@princeton.edu), 1386 Conservancy Dr. E, Tallahassee, FL 32312. *Minimum Clique Number, Chromatic Number, and Ramsey Numbers.*

Let $Q(n, c)$ denote the minimum clique number over graphs with n vertices and chromatic number c. We investigate the asymptotics of $Q(n, c)$ when n/c is held constant. We show that when n/c is an integer α, $Q(n, c)$ has the same growth order as the inverse function of the Ramsey number $R(\alpha + 1, t)$ (as a function of t). Furthermore, we show that if certain asymptotic properties of the Ramsey numbers hold, then $Q(n, c)$ is in fact asymptotically equivalent to the aforementioned inverse function. We use this fact to deduce that $Q(n, \lceil n/3 \rceil)$ is asymptotically equivalent to the inverse function of $R(4, t)$. (Received September 15, 2011)