1152-05-322 **Eva Czabarka*** (czabarka@math.sc.edu). *Midrange crossing constant(s) of graphs.*

The crossing number of a graph is the minimum number of crossings it can be drawn in a plane. Let $\kappa(n,m)$ be the minimum crossing number of graphs with n vertices and m edges. The crossing lemma states that for $m > 4n$, $\kappa(n,m) \geq \frac{1}{64}\frac{m^3}{n^2}$. Amazingly, ten years before the crossing lemma, Erdős and Guy conjectured that for any $m = m(n)$ satisfying $n << m << n^2$, the quantity $\lim\limits_{n\to\infty} \frac{\kappa(n,m)n^2}{m^3}$ exists and is positive; this quantity has been dubbed the midrange crossing constant. Pach, Spencer and Tóth proved this conjecture. We extend their proof to show that the midrange crossing constant exists for all graph classes that satisfy certain conditions. The crossing constant (for the class of all graphs) was shown to be between $\frac{1}{19}$ and $\frac{8}{9\pi^2}$. We present an alternative probabilistic upper bound construction that is easier to compute than the original. (Received September 07, 2019)