1125-05-222 **Rachel Kirsch*** (`rkirsch2@math.unl.edu`) and **Jamie Radcliffe**. *The Maximum Number of Triangles in a Graph with a Fixed Number of Edges and Maximum Degree.* Preliminary report.

Extremal problems concerning the number of independent sets or complete subgraphs have been well studied in recent years. Cutler and Radcliffe proved that among graphs with n vertices and maximum degree at most r, where $n = a(r+1)+b$ with $0 \leq b \leq r$, $aK_{r+1} \cup K_b$ has the maximum number of complete subgraphs, answering a question of Galvin. Gan, Loh, and Sudakov conjectured that $aK_{r+1} \cup K_b$ also maximizes the number of complete subgraphs K_t for each fixed size $t \geq 3$, and proved this for $a = 1$. Cutler and Radcliffe proved this conjecture for $r \leq 6$. We investigate a variant of this problem where we fix the number of edges instead of the number of vertices. We conjecture that $aK_{r+1} \cup C(b)$, where $C(b)$ is the colex graph on b edges, maximizes the number of triangles among graphs with m edges and maximum degree r, where $m = a\binom{r+1}{2} + b$, $0 \leq b < \binom{r+1}{2}$. We prove this conjecture for $r \leq 6$. (Received August 14, 2016)