1056-11-823　　　　**Helen G Grundman*** (`grundman@brynmawr.edu`), Department of Mathematics, Bryn Mawr College, 101 N. Merion Ave., Bryn Mawr, PA 19010. *Solutions to $xyz = x + y + z = 1$ in algebraic integers of bounded degrees.* Preliminary report.

Several papers have considered the problem of finding, for a fixed $n \in \mathbf{Z}^{+}$, all integral solutions to $xyz = x + y + z = 1$ contained in fields of degree n over $\mathbf{Q}$. Complete results are known for $n \leq 4$, but only partial results are known for $n = 5$. In particular, it is not known (or even conjectured) that, for $n = 5$, all of the solutions have been found.

In this talk, I will summarize the earlier findings for $n \leq 5$ and then discuss more recent work that has led to the discovery of further solutions to the equation in the quintic field case. I will also discuss the remaining roadblocks to completely solving the problem in this case. (Received September 17, 2009)