1086-05-576 **Neil Hindman** and **Dev Phulara*** (phulara@comcast.net). *Some new additive and multiplicative Ramsey numbers.*

For $a, r \in \mathbb{N}$, the set of positive integers, define $FSP_2(a,r)$ $\big($respectively $SP_2(a,r)\big)$ to be the first $n \in \mathbb{N}$, if such exists, such that whenever $\{1, 2, \ldots n\}$ is r-colored, there exist x and y with $a \leq x < y$ such that $\{x, y, x+y, xy\}$ is monochromatic (respectively $\{x+y, xy\}$ is monochromatic). If no such n exists, the number is defined to be infinite. It is an old result of R. Graham that $SP_2(a,2)$ is finite for all a. With that exception, the only cases (with $r > 1$) for which $FSP_2(a,r)$ or $SP_2(a,r)$ are known to be finite are those for which explicit values have been computed. We provide exact values of $FSP_2(a,2)$ for $a \leq 5$ (of which $FSP_2(1,2)$ and $FSP_2(2,2)$ were previously known). We provide exact values of $SP_2(a,3)$ for $a \leq 8$ and exact values of $SP_2(a,2)$ for $a \leq 60$. We also compute upper and lower bounds for $SP_2(a,2)$. (Received September 07, 2012)