1047-11-42 **D. A. Goldston** (goldston@math.sjsu.edu), San Jose State University, San Jose, CA 95192, **S. W. Graham*** (graha1sw@cmich.edu), Central Michigan University, Mount Pleasant, MI 48859, **J. Pintz**, Renyi Mathematical Institute, Hungarian Academy of Sciences, Budapest, Hungary, and **C. Y. Yıldırım**, Bogazici University, Istanbul, Turkey. *Some Conjectures of Erdős on Consecutive Integers.*

In 1952, Erdős and Mirsky conjectured that there are infinitely many integers $n$ such that $d(n) = d(n+1)$. This conjecture was proved by Heath-Brown in 1985. The same proof shows that $\Omega(n) = \Omega(n+1)$ infinitely often, where $\Omega(n)$ is the number of prime power divisors of $n$. In 2001, Schlage-Puchta proved the corresponding conjecture that $\omega(n) = \omega(n+1)$ infinitely often, where $\omega(n)$ denotes the number of prime divisors of $n$.

We recently proved that in any system of three linear forms satisfying obvious local necessary conditions, there are at least two forms that are infinitely often products of exactly two prime factors. Using this result, we are able to give proofs of the above results that are both simpler and sharper. For example, we can prove that there are infinitely many integers $n$ that simultaneously satisfy

$$\omega(n) = \omega(n+1) = 4, \Omega(n) = \Omega(n+1) = 5 \text{ and } d(n) = d(n+1) = 24$$

We can also prove similar results with $n$ replaced by $n + b$ for an arbitrary positive integer $b$. (Received December 16, 2008)