# Lesson 7 Problem 2 Solution

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**Problem 2**
Based on the division problem from last lesson, any positive number $m$ can be represented uniquely as one of $6n$, $6n+1$, $6n+2$, $6n+3$, $6n+4$, $6n+5$ for some nonnegative integer $n$. If $m$ is prime, it doesn't have any divisors other than 1 and itself. $6n$, $6n+2$ and $6n+4$ have divisor 2. $6n+3$ has divisor 3. So they can't be a prime greater than 3. Therefore a prime number greater than 3 must be able to be represented as either $6n+1$ or $6n+5$for some nonnegative integer $n$.