

## **How Does Her Math Relate to Real Life**

You may be asking yourself how would you use this in real life? Well we use it everyday when we tell time. Time is in mod twelve. Since we are in mod twelve, this means that twelve is equal to zero, and the number that follows will be one. So, thirteen is equal to one and fourteen is equal to two and so on. There are many other times in life in which we use this definition. We also use this in the numbering of days in a week. We never say there are eight days in a week; we say there is a week and one day.

Just think of Fermat's Last Theorem,  $x^n + y^n = z^n$ . Smith did not actually work on this theorem, but it has no solutions in positive whole numbers for  $n > 2$ . If there is an integer solution and we do everything in mod  $p$ , then we should still get integer solutions, but the numbers might be reduced. This is just a few of the real life examples for characteristic  $p$ .