Name:_____

Lecture 7, class activity. Modular Arithmetic.

1. Show that $n \equiv 2 \pmod 6 \implies n \equiv 2 \pmod 3$.

2. Show that the converse of this statement is false.

3. Can you generalize this into a conjecture?

4. Fill out the following table:

	$n=1$	$n=2$	$n=3$	$n=4$	$n=5$
$2^n \pmod{10}$					
$3^n \pmod{10}$					
$4^n \pmod{10}$					
$5^n \pmod{10}$					
$6^n \pmod{10}$					
$7^n \pmod{10}$					
$8^n \pmod{10}$					
$9^n \pmod{10}$					

Hint: You can just compute everything, but if you think a bit about what you're doing, you can save a lot of time in many of these computations....