Lecture 9
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This week we continue with modular arithmetic and a famous theorem, Fermat's Little Theorem, as well as Euler's ϕ function, a function needed for next week's theorem of Euler's generalization of Fermat's Little Theorem.

You might want to prove that Fermat's Little Theorem is equivalent to $a^p \equiv a \mod p$ as that form is easier to prove. You probably want to prove the Freshman's Delight, namely, $(a + b)^p \equiv a^p + b^p \mod p$.

This is a relatively light week so I suggest you work on your term paper as well.