

Discrete Mathematics

Lecture-15: Number Theory Quick Review

November 17, 2012

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 - Returns $a^b \bmod c$.

Some theorems we shall be using

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Given $[a_1, a_2, \dots, a_k]$ pairwise relatively prime integers and integers $[m_1, m_2, \dots, m_k]$, $m_i < a_i$ then there is a unique integer $M < \prod_{i=1}^k a_i$ such that $M \bmod a_i = m_i$

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- **Euler's Theorem:**

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- **Primitive Roots:** The finite field $GF(q)$ has primitive roots ($\{a^k, 0 \leq k \leq q-2\} = GF^*(q)$).