CS 3333 Mathematical Foundations   Spring '11

Recitation 3   Practiced on: 1/26   5:30 - 6:20 pm

Division and Modular Arithmetic, Primes, GCDs and LCMs

Problem:

All books are identified by an **International Standard Book Number (ISBN)**, a 10-digit code $X_1 X_2 \ldots X_{10}$, assigned by the publisher. (This system will change in 2007 when a new 13-digit code will be introduced.) These 10 digits consist of blocks identifying the language, the publisher, the number assigned to the book by its publishing company, and finally, a 1-digit check digit that is either a digit or the letter X (used to represent 10). This check digit is selected so that $\sum_{i=1}^{10} i x_i \equiv 0 \ (mod \ 11)$ and is used to detect errors in individual digits and transposition of digits.

1. The ISBN of the fifth edition of Elementary Number Theory and Its Applications is 0-32-123Q072, where Q is a digit. Find the value of Q. (Textbook [KR] Page 210: 34)

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