

CMSC 456: Homework 1, Fall 2005

Due at the **beginning** of class on **September 14, 2005**.

Some of the problems require thought - do not wait until the last day to start working on them! If you cannot come up with complete solutions, write down your partial solutions clearly. All sections, page numbers etc. below refer to the class textbook, *Introduction to Cryptography with Coding Theory*, **Second Edition**.

1. Problem 3 in Section 2.13, page 55 of the textbook. (That is, show that if enc and dec are the encryption and decryption functions, then $dec(enc(x)) = x$ for $x = 0, 1, \dots, 25$.) **(5 points)**
2. Problem 5 in Section 2.13, page 55 of the textbook. **(5 points)**
3. Problem 7 in Section 2.13, page 55 of the textbook. **(5 points)**
4. Read and understand the material in pages 19 and 20 of the textbook, on the Vigenere cipher. **(0 points)**
5. Problem 10 in Section 2.13, page 56 of the textbook. **(10 points)**
6. Problem 23 in Section 2.13, page 58 of the textbook. **(5 points)**
7. **(For graduate students only.)** Problem 25 in Section 2.13, pages 58-59 of the textbook. **(15 points)**