Seminar 1

In the following exercises use the 27-letter alphabet:

$$\_\ A\ B\ C\ D\ E\ F\ G\ H\ I\ J\ K\ L\ M\ N\ O\ P\ Q\ R\ S\ T\ U\ V\ W\ X\ Y\ Z$$
$$0\ 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26$$

1. Consider the following 6 ciphers:

(1) the Caesar cipher

(2) the substitution cipher

(3) the affine cipher

(4) the Belaso cipher

(5) the Hill cipher

(6) the permutation cipher

with the 27-letter alphabet and the keys from the course examples. Encrypt and then decrypt the word "*Cryptography*".

2. Knowing that the following ciphertext was encrypted with the Caesar cipher, determine the decryption key and decrypt it:

$$\_OPZPZHULHZEJPWOLY$$

3. Choose an encryption key, encrypt and then decrypt with the affine cipher the first 4 characters from the sequence of letters consisting of your specialization.

4. Choose an encryption key, encrypt and then decrypt with the Hill cipher the first 4 characters from the sequence of letters consisting of your specialization.