

Exercise

1. Exercise Shift Cipher

a. Enkripsikan GOPHER dengan $K = 20$

G	O	P	H	E	R
6	14	15	7	4	17
26	34	35	27	24	37
0	8	9	1	24	11
A	I	J	B	Y	L

b. Ubah ZGXEIDZIN menjadi Plaintext dengan $K = 15$

Z	G	X	E	I	D	Z	J	N
25	6	23	4	8	3	25	9	13
10	-9	8	-11	-7	-12	10	-6	-2
10	17	8	15	19	14	10	20	24
K	R	I	P	T	O	K	U	Y

2. Exercise ROT 13

Dekripsikan uvzngvs dengan ROT 13

U	V	Z	N	G	V	S
H	I	M	A	T	I	F

Soal

Buat satu kalimat sederhana (min 3 kata & total min 15 huruf), enkripsikan dengan Affine Cipher dan kembalikan menjadi plaintexts

Enkripsi

$A = 17, B = 5$

$17x + 5$

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N	A	M	A				S	F	B	F		
13	0	12	0				18	5	1	5		
S	A	Y	A				Z	F	X	F		
18	0	24	0				25	5	23	5		
O	S	M	O	N	D		J	Z	B	J	A	E
14	18	12	14	15	3		9	25	1	9	0	4
H	A	Y	L	I	M		U	F	K	X	L	B
7	0	11	24	8	12		20	5	10	23	11	1

Dekripsi

GCD(17, 26)

$$26 = 17 * 1 + 9$$

$$17 = 9 * 1 + 8$$

$$9 = 8 * 1 + 1$$

$$8 = 1 * 8 + 0$$

$$T_0 = 0, T_1 = 1$$

$$Q_1 = 1, Q_2 = 1, Q_3 = 1$$

$$T_2 = (t_0 - (q_1 \cdot t_1)) \bmod 26 = (0 - (1 \cdot 1)) \bmod 26 = 25$$

$$T_3 = (t_1 - (q_2 \cdot t_2)) \bmod 26 = (1 - (1 \cdot 1)) \bmod 26 = 2$$

$$T_4 = (t_2 - (q_3 \cdot t_3)) \bmod 26 = (25 - (1 \cdot 2)) \bmod 26 = 23$$

$$A^{-1} = 23, B = 5$$

$$23(x - 5)$$

S	F	B	F				N	A	M	A		
18	5	1	5				13	0	12	0		
Z	F	X	F				S	A	Y	A		
25	5	23	5				18	0	24	0		
J	Z	B	J	A	E		O	S	M	O	N	D
9	25	1	9	0	4		14	18	12	14	15	3
U	F	K	X	L	B		H	A	Y	L	I	M
20	5	10	23	11	1		7	0	11	24	8	12