

## Frequency of Digrams (Letter Pairs) in the Ciphertext for Exercise Set #1, Exercise B

Row  $x$ , column  $y$  of the table below gives the relative frequency of the digram  $xy$  in the 930-character ciphertext for exercise B in exercise set #1. Specifically, it gives the number of occurrences of  $xy$  per 10,000 characters of text.

	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
A	11	97	11	118	0	140	11	11	22	32	32	0	0	0	0	43	11	22	32	43	22	0	0	54	54	75
B	32	0	0	22	0	22	0	11	54	22	0	0	0	11	0	11	22	129	0	0	0	0	0	0	0	0
C	11	11	0	22	0	0	0	0	0	32	43	0	0	0	11	0	22	22	0	0	32	0	11	0	0	22
D	11	0	0	0	0	0	0	11	65	0	108	0	0	0	0	0	43	43	0	11	0	0	0	0	43	11
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	11	0	0	0	0	43	11	11	43	0	0	0	32	0	11	0	0	0	22	0	0	11	0	43	54
G	11	22	54	11	0	0	86	0	11	0	0	0	0	0	0	0	11	97	0	0	11	0	0	32	0	22
H	11	0	43	0	0	22	11	0	22	0	0	0	0	0	0	0	0	11	0	11	0	0	0	0	0	0
I	0	32	11	11	0	11	54	11	0	65	0	0	0	0	0	32	22	11	43	43	11	0	54	43	129	108
J	86	22	11	43	0	22	11	0	108	43	75	0	0	0	0	0	22	75	0	0	0	0	22	22	0	43
K	140	0	11	11	0	0	0	11	97	0	11	0	0	0	0	0	172	334	0	11	0	0	0	11	0	32
L	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	86	0	0	0	0	11	0	0	11	11	75	0	0	0	0	0	11	32	0	0	0	0	0	0	0	32
O	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	11	0	0	0	0	0	0	11	11
P	22	0	0	0	0	0	0	0	22	0	0	0	11	0	0	11	0	54	0	22	0	0	0	0	0	43
Q	32	65	0	0	0	0	22	0	0	86	0	0	0	11	0	22	0	11	0	11	11	0	0	22	140	65
R	65	43	22	54	0	0	65	11	118	108	43	0	0	54	0	22	11	22	75	194	32	22	65	118	118	129
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	140	0	0	0	0	0	0	0	0
T	86	0	32	11	0	0	0	11	22	43	22	0	0	11	0	11	32	97	0	22	0	0	11	0	22	22
U	0	0	0	11	0	0	11	0	0	11	0	0	0	0	0	0	11	54	0	11	0	0	0	0	0	32
V	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0
W	22	0	0	0	0	22	0	0	65	0	22	11	0	0	32	0	11	43	0	0	0	0	0	0	0	0
X	11	32	0	32	0	0	0	22	11	32	43	0	0	32	0	11	11	43	0	0	11	0	22	22	32	54
Y	75	0	22	0	0	0	11	11	11	43	22	0	0	118	0	11	11	65	0	0	11	0	0	86	11	108
Z	118	0	22	0	0	32	43	11	43	32	334	0	0	0	0	0	65	86	0	54	0	0	11	11	11	32

The most common digrams in the ciphertext for Exercise B are:

<b>Digram</b>	<b>Frequency (per 10,000 chars)</b>
<b>KR</b>	333
<b>ZK</b>	333
<b>RT</b>	194
<b>KQ</b>	172
<b>AF</b>	140
<b>KA</b>	140
<b>QY</b>	140
<b>SR</b>	140
<b>BR</b>	129
<b>IY</b>	129
<b>RZ</b>	129
<b>AD</b>	118
<b>RI</b>	118
<b>RX</b>	118
<b>RY</b>	118
<b>YN</b>	118
<b>ZA</b>	118
<b>DK</b>	108
<b>IZ</b>	108
<b>JI</b>	108
<b>RJ</b>	108
<b>YZ</b>	108
<b>AB</b>	97
<b>GR</b>	97
<b>KI</b>	97
<b>TR</b>	97
<b>GG</b>	86
<b>JA</b>	86
<b>NA</b>	86
<b>QJ</b>	86
<b>TA</b>	86

<b>Digram</b>	<b>Frequency (per 10,000 chars)</b>
<b>YX</b>	86
<b>ZR</b>	86
<b>AZ</b>	75
<b>JK</b>	75
<b>JR</b>	75
<b>NK</b>	75
<b>RS</b>	75
<b>YA</b>	75
<b>DI</b>	65
<b>IJ</b>	65
<b>QB</b>	65
<b>QZ</b>	65
<b>RA</b>	65
<b>RG</b>	65
<b>RW</b>	65
<b>WI</b>	65
<b>YR</b>	65
<b>ZQ</b>	65
<b>AX</b>	54
<b>AY</b>	54
<b>BI</b>	54
<b>FZ</b>	54
<b>GC</b>	54
<b>IG</b>	54
<b>IW</b>	54
<b>PR</b>	54
<b>RD</b>	54
<b>RN</b>	54
<b>UR</b>	54
<b>XZ</b>	54
<b>ZT</b>	54