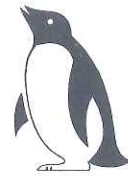


You find a piece of paper with this picture and the word **QFOHVJO** on one side, and the message **DBO ZPV LFFQ B TFDSFU?** on the other. You also remember seeing a picture of a monkey with the word **NPOLFZ**.

PENGUIN



MONKEY

* Letters marked in (yellow) are from the clues. The rest, we see the pattern.

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
Z	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

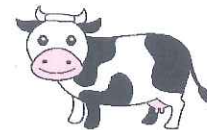
What does the message say?

DBO ZPV LFFQ B TFDSFU?
CAN YOU KEEP A SECRET?

Can you send back a message that says **trust me**?

USVTU NF
TRUST ME

Later you find another paper. On one side we have these pictures with the words **FKHXG IUC**. On the other side we have the message **IUSK ZU ZNK HXOJMK GZ TUUT**.



(typo corrected)

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
U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T

What does this message say?

IUSK ZU ZNK HXOJMK GZ TUUT.
COME TO THE BRIDGE AT NOON.

What pattern did you notice? Can you find a way to describe the code that doesn't require the animals?

This is a shift cipher with $\Delta=6$.
(count down six boxes to encode, or subtract six to decode.)

Finally, you find another piece of paper. It has this picture on one side with the word **UPUSLORX**, and on the other side we see the message **PUOYU REZ - XLUC NREZ ZLE CEI OVU**.



A	E	I	O	U	B	C	D	F	G	H	J	K	L	M	N	P	Q	R	S	T	V	W	X	Y	Z
I	O	U	A	E	X	Y	Z	B	C	D	F	G	H	J	K	L	M	N	P	Q	R	S	T	V	W

What does this message say?

PUOYU REZ - XLUC NREZ ZLE CEI OVU.
LEAVE NOW - THEY KNOW WHO YOU ARE.

(This is a shift cipher with $\Delta=3$, except that we separated out the vowels and the consonants.)

For each of these find the REMAINDER. We do not care about the quotient. You may use any mathematical method to find the answer.

Example: $26 \overline{)800}$ has remainder 20.

$26 \overline{)35}$ Remainder 9

$26 \overline{)41}$ R 15

$26 \overline{)92}$ R 14

$26 \overline{)243}$ R 9

$26 \overline{)182}$ R 0

$21 \overline{)35}$ R 14

$21 \overline{)150}$ R 3

$5 \overline{)173}$ R 3

Note:

Finding remainders is a skill we will need later.

When we work with all 26 letters of the alphabet together, we're likely to divide by 26.

If we separate out the 5 vowels and 21 consonants, we might need to divide by 5 and 21.

Encode the following message using a shift cipher with $\Delta = 4$: LONG DIVISION IS BORING.

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
X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W

ORQT GLYLVLRR LV ERULQT
LONG DIVISION IS BORING