

## All codes are solvable with a bit of logic and persistence. Good luck.

1.	Here's an easy one to get you started:	SMELBORP	EDOC EHT	OT EMOCI	LEW
	What does it say?				

2.	Substitute letters for numbers to find 2 different words that are anagrams of each other.
	Each number represents a unique letter. The 1st word is the name of a polygon used a lot in geometry and the
	second word is used a lot in calculus.

3. Using the Carter Cipher (a different set of rules than above), decode the following:

4. The simple code of substituting one letter for another was used by Julius Caesar when writing secret messages. Can you decode this quotation?

```
YJJ ZYB NPCACBCLRQ ZCEYL YQ HSQRGDGYZJC KCYQSPCQ
```

5. Here is another straightforward substitution cryptogram. Can you decode this one?

JMC KYJWHWZJ YQKPBLWHZ XC BWEC WT JMC GCZJ KU LBB YKZZWGBC XKQBRZ; LTR JMC YCZZWHWZJ UCLQZ JMWZ WZ JQVC.

6. Can you find the hidden message in the memo below? Hint—Start with 5.

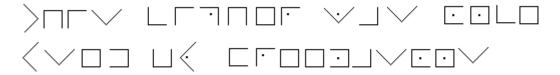
Chris is insisting that the second key to the file test cabinet, and the two colored transparencies, will first need clearance before Sue and Sam start arriving at the office to check the material early next Monday, so that Carol can develop them on Tuesday afternoon and take them to my department early on Wednesday morning.

7. The code below is pretty straightforward. In fact, most of you will recognize it from your computer. Even if the symbols don't immediately come to mind, it should not be too hard to crack. The sentence is very well known.

```
♦□ २M □□ ■□♦ ♦□ २M @ ♦≈©♦ X• ♦≈M □◆M·♦X□■
```



8. Decode this message, which is encrypted using symbols from the 'Pig Pen' cipher.



9. Sometimes codes are revealed by crossing out letters. Cross out 10 letters below to reveal a short phrase.

## ATSEHNLOERTPTHTREARSES

10. Often simple keywords are used to break codes. See if you can determine what 9-letter word is meant using the numbers and hints given.

123456789—My 123 is a mischief. My 3456 is to the left.

My 678 is a shade of brown. My 789 is a social insect.

11. Some substitution ciphers are created by using a random cipher alphabet rather than just a shift. The sender and recipient can communicate as long as they know the cipher alphabet. The weakness in this system is that the English language is structured and each letter appears with a certain frequency. This means that the cipher letter will appear with the same frequency.

Here are the letters of the alphabet with their associated percentage frequencies in the English language:

A	В	С	D	Е	F	G	Н	I	J	K	L	M
8.2	1.4	2.8	3.8	13.1	2.9	2.0	5.3	6.3	0.1	0.4	3.4	2.3
=												
N	О	P	Q	R	S	T	U	V	W	X	Y	Z
												0.1

Remember that this is an average frequency and short messages may not contain these exact frequencies. The message below has been encrypted using a random cipher alphabet. Use the frequencies above as a guide to recovering the plaintext letters and once you have a few then guess some common English words that fit around these letters.

ZBDDH QWBPQ KHBTM ALBKM WOCLM ESBEE JOBXE MWOPK BIXBW TUJWJ DUEME ZBLQA



- 12. It is well-known for many people that computers only handle **0**s (zeros) and **1** (ones). By means of sequences of **0** and **1** the computer can express in binary form diverse ranks of numbers. Nevertheless there is no such evident way to represent letters with **0**s and **1**s. However, to be able to do that, computers use the ASCII code, that is a table or list that contains all the letters in the alphabet plus other additional characters. So, exactly what does ASCII stand for?
- 13. Below is one word from the titles of 5 well-known songs. Next to each word is the name of the band (in code) that recorded that song. Identify those 5 well-known bands.

BICYCLE--34-42-10-10-28 CLOUD—36-30-24-24-18-28-14-38-40-30-28-10-38 MISERY—14-36-10-10-28-8-2-50 FIELDS—4-10-2-40-24-10-38 BROTHERS—8-18-36-10-38-40-36-2-18-40-38

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14. Somewhere in the grid below a body lies. It is not actually hidden, in fact, you can see it quite clearly, but you still may be unable to find it. What does it say?

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

15. One of the most common codes that is still in use today (though rarely) is the Morse Code. See if you can decipher what is said below in Morse Code.

- .... .. ... - .... - .... - ... -