

# Science Olympiad – AnotherPenguin's SSSS Codebusters Test

This is meant as a test for all levels. There are easier questions and more difficult questions in this test. Note that the test length is intended for a full team, so do not expect to finish the test if you take it solo. Besides that, good luck and have fun :) - AnotherPenguin

## Scoring:

Time to solve first problem: \_\_\_\_\_ (use to calculate Bonus below)

| Question           | Value | Incorrect letters | Deduction | Score |
|--------------------|-------|-------------------|-----------|-------|
| Timed              | 250   |                   |           |       |
| 1                  | 100   |                   |           |       |
| 2                  | 100   |                   |           |       |
| 3                  | 150   |                   |           |       |
| 4                  | 150   |                   |           |       |
| 5                  | 300   |                   |           |       |
| 6                  | 400   |                   |           |       |
| 7                  | 200   |                   |           |       |
| 8                  | 200   |                   |           |       |
| 9                  | 400   |                   |           |       |
| 10                 | 300   |                   |           |       |
| 11                 | 350   |                   |           |       |
| 12                 | 300   |                   |           |       |
| 13                 | 250   |                   |           |       |
| 14                 | 300   |                   |           |       |
| 15                 | 300   |                   |           |       |
| 16                 | 300   |                   |           |       |
| 17                 | 400   |                   |           |       |
| 18                 | 600   |                   |           |       |
| 19                 | 500   |                   |           |       |
| 20                 | 600   |                   |           |       |
| 21                 | 200   |                   |           |       |
| 22                 | 300   |                   |           |       |
| 23                 | 250   |                   |           |       |
| 24                 | 300   |                   |           |       |
| <b>Bonus</b>       |       |                   |           |       |
| <b>Final Score</b> |       |                   |           |       |



The following tables might be useful during the event.

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

| 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 |

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

|   |   |    |    |   |    |    |    |    |    |    |    |
|---|---|----|----|---|----|----|----|----|----|----|----|
| 1 | 3 | 5  | 7  | 9 | 11 | 15 | 17 | 19 | 21 | 23 | 25 |
| 1 | 9 | 21 | 15 | 3 | 19 | 7  | 23 | 11 | 5  | 17 | 25 |

|              |   |              |     |              |   |              |     |
|--------------|---|--------------|-----|--------------|---|--------------|-----|
| <b>AAAA</b>  | A | <b>AABBA</b> | G   | <b>ABBAA</b> | N | <b>BAABA</b> | T   |
| <b>AAAAB</b> | B | <b>AABBE</b> | H   | <b>ABBAB</b> | O | <b>BAABB</b> | U/V |
| <b>AAABA</b> | C | <b>ABAAA</b> | I/J | <b>ABBBA</b> | P | <b>BABAA</b> | W   |
| <b>AAABB</b> | D | <b>ABAAB</b> | K   | <b>ABBBB</b> | Q | <b>BABAB</b> | X   |
| <b>AABAA</b> | E | <b>ABABA</b> | L   | <b>BAAAA</b> | R | <b>BABBA</b> | Y   |
| <b>AABAB</b> | F | <b>ABABB</b> | M   | <b>BAAAB</b> | S | <b>BABBB</b> | Z   |

## Frequency Table of English letters:

|            |           |           |           |           |
|------------|-----------|-----------|-----------|-----------|
| E - 12.51% | S - 6.54% | C - 3.06% | G - 1.96% | K - 0.67% |
| T - 9.25%  | R - 6.12% | U - 2.71% | W - 1.92% | X - 0.19% |
| A - 8.04%  | H - 5.49% | M - 2.53% | Y - 1.73% | J - 0.16% |
| O - 7.60%  | L - 4.14% | F - 2.30% | B - 1.54% | Q - 0.11% |
| I - 7.26%  | D - 3.99% | P - 2.00% | V - 0.99% | Z - 0.09% |
| N - 7.09%  |           |           |           |           |

## Frequency Table of Spanish letters:

|            |           |           |           |           |
|------------|-----------|-----------|-----------|-----------|
| E - 14.08% | I - 5.98% | M - 3.08% | Y - 1.09% | Z - 0.47% |
| A - 12.16% | L - 5.24% | P - 2.89% | V - 1.05% | Ñ - 0.17% |
| O - 9.20%  | D - 4.67% | B - 1.49% | G - 1.00% | X - 0.14% |
| S - 7.20%  | T - 4.60% | H - 1.18% | F - 0.69% | K - 0.11% |
| N - 6.83%  | U - 4.69% | Q - 1.11% | J - 0.52% | W - 0.04% |
| R - 6.41%  | C - 3.87% |           |           |           |

For the purposes of cryptograms it is customary to treat n and ñ as distinct letters, but a and á are the same letter. Likewise for e and é, and i and í. In other words, all the accent marks get amputated when working with cryptograms. Also, while some older Spanish dictionaries consider ch, ll, and rr, to be their own letters—this has fallen out of modern usage. Accordingly, “burro” is considered as five letters: “b-u-r-r-o” and not as four letters “b-u-rr-o.”

## Morse Code:

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

|          |         |         |         |           |
|----------|---------|---------|---------|-----------|
| 0 -----  | 2 ••--- | 4 ••••- | 6 -•••• | 8 -----•• |
| 1 •----- | 3 •••-- | 5 ••••• | 7 --••• | 9 -----•  |

|         |          |         |         |          |        |       |       |
|---------|----------|---------|---------|----------|--------|-------|-------|
| • E     | - T      | -• N    | -- M    | -•• D    | -•- K  | -•• G | --- O |
| •• I    | •- A     | •-• R   | •-- W   | •--• P   | •--- J |       |       |
| ••• S   | ••- U    | ••-• F  | •-•• L  | --•• Z   | --•- Q |       |       |
| •••• H  | •••- V   | -•-• C  | -•-• Y  | ••••- 4  |        |       |       |
| -••• B  | -••- X   | ••--- 2 | ••••- 3 | -----• 9 |        |       |       |
| ----- 0 | •----- 1 | --••• 7 | ---•• 8 |          |        |       |       |
| ••••• 5 | -•••• 6  |         |         |          |        |       |       |

Timed Question **[250 points]** [Aristocrat] My username is now AnotherGiraffe. When you have solved it, raise your hand so that the time can be recorded and the solution checked.

**Q ZWUXKOU EQUUIJ HWEIAW Q XOCQYYW, RI SKRJ HW JDW**

**HWRJ ZWUXKOU NIK EQU HW.**

|                    | 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 |
|--------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| <b>Frequency</b>   | 1 |   | 1 | 1 | 3 |   |   | 4 | 4 | 4 | 4 |   |   | 1 | 3 |   | 5 | 3 | 1 |   | 7 |   | 9 | 3 | 2 | 2 |
| <b>Replacement</b> |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

## AnotherPenguin's SSSS Codebusters Test

1) **[100 points]** [Caesar] You found an ancient manuscript that has been encoded with what you believe to be a Caesar cipher. Decode the hidden message.

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V | A | B | E | Q | R | E | G | B | Z | N | V | A | G | N | V | A | N | V | E | F | C | R | R | Q | I | R | Y | B | P | V | G | L | , |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | , |
| N | F | J | N | Y | Y | B | J | A | R | R | Q | F | G | B | O | R | N | G | V | G | F | J | V | A | T | F | S | B | E | G | L | - |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | - |   |
| G | U | E | R | R | G | V | Z | R | F | R | I | R | E | L | F | R | P | B | A | Q | E | V | T | U | G | ? |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | ? |   |   |   |   |   |   |   |

2) **[100 points]** [Caesar] Encode this quote by Ambrose Bierce using a shift of 19.

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | T | K | B | L | Z | H | W | , | L | P | T | R | H | Y | M | X | T | V | A | B | G | Z | T | F | X | K | B | V | T | G | L |
|   |   |   |   |   |   |   |   | , |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Z | X | H | Z | K | T | I | A | R | . |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   | . |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

3) [150 points] [Affine] Decrypt this affine with  $a=25$  and  $b=51$ .

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|--|
| G | S | R | H | Z | U | U | R | M | V | X | R | K | S | V | I | R | H | R | M | Z | X | G | F | Z | O | R | G | B | Z | M |  |  |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |  |

  

|   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Z | G | Y | Z | H | S | X | R | K | S | V | I | . |
|   |   |   |   |   |   |   |   |   |   |   |   |   |

4) [150 points] [Affine] Encode this quote by novelist Charles Dudley Warner with  $a=17$  and  $b=13$ .

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E | V | E | R | Y | O | N | E | T | A | L | K | S | A | B | O | U | T | T | H | E | W | E | A | T | H | E | R | , | B | U | T |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

  

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | O | O | N | E | D | O | E | S | A | N | Y | T | H | I | N | G | A | B | O | U | T | I | T | . |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

AnotherPenguin's SSSS Codebusters Test

5) [300 points] [Baconian] This question is dedicated to my partner :)

DDBBBDDDDDBDDBBDDDBDDDDDEBDDDEBDBBDBBDBBDDDBDDDDDBDDDBDDDB

BBBDBBDDBBBDDBBBDDDDDDDEBDDDDDBDDBBBDBBDDDDDBDDDB

DDDBDDDBDDDDDBDDDDDDDDDEBDBBDBBDBBDDDBDDDDDDDDDBBDDDDDB

DDBDDDDBBBDDDBBDDDBDDDDDBBDDDDDBDDDBBDBBDDDBBDBBDDDD

BDDDDDDDBDDDD

6) [400 points] [Baconian] I'm sorry, I had to pass forward the pain that previous proctors have given me.

WORRY DEATH CHESS ALOHA LOONY BE ITS EARTH ACRES

AMPLE A BOOK A SHOT BE ITS BE ITS EARTH A CASE BE ITS

A BEAT ACRES ACRES ALPHA BACON A PLAN ABBEY AMPLE

A BOOK BE OLD A BOOK ABBEY AMPLE



7) **[200 points]** [Vignere] Decrypt this quote from Brooke Shields using keyword smoke.

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| K | Y | C | U | M | F | S | Y | S | P | D | E | W | P | C | G | G | F | O | O | A | X | Z | O | H | Q | A | I | F | I |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

  

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|--|--|--|
| D | A | G | D | E | N | Q | F | I | M | E | B | C | B | X | S | Z | H | Z | E | J | F | C | P | C | G | G | F | V | M | X | Q |  |  |  |  |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |

8) **[200 points]** [Vignere] Decrypt this cipher with the keyword of "waves". Picture ocean waves crashing against the shore...

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W | N | Y | M | X | U | O | P | E | K | G | M | Z | L | G | S | I | H | J | W | A | L | D | R | Y | Z | O | I |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

  

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X | L | A | L | G | Q | W | U | O | P | V | W | P | O | J | F | D | E | N | Y | X | G | O | E | Z |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

## AnotherPenguin's SSSS Codebusters Test

9) [400 points] [Hill] Decrypt this hill cipher encrypted with a keyword of FAST.

$$\begin{pmatrix} F & A \\ S & T \end{pmatrix} \equiv \begin{pmatrix} 5 & 0 \\ 18 & 19 \end{pmatrix}$$

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W | J | D | O | M | Q | Q | W | W | W | H | S | F | D | U | U | Y | U | N | K | M | J | W | N | Z | A |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| S | I | A | L | U | H | S | P | I | O | B | K | N | K | Z | M | M | J | U | H | S | I | E | H |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

10) [300 points] [Hill] Encode this quote with a keyword of HILL.

$$\begin{pmatrix} H & I \\ L & L \end{pmatrix} \equiv \begin{pmatrix} 7 & 8 \\ 11 & 11 \end{pmatrix}$$

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I | T | I | S | E | A | S | I | E | R | T | O | G | O | D | O | W | N | A | H | I | L | L | T | H | A |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| N | U | P | B | U | T | T | H | E | V | I | E | W | I | S | F | R | O | M | T | H | E | T | O | P |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

11) [350 points] [Aristocrat] Why, it's a fine day on the golf course, isn't it?

TK ZIX SDU QSXWON TM S HNIDR SMG SDU SKDSTG IK

VTWONMTMW OIVG XJ S IMU TDIM. UEUM WIG QSM'N OTN S

IMU TDIM.

|             | 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 |
|-------------|---|---|---|---|---|---|---|---|---|---|---|---|----|---|---|---|---|---|----|---|---|---|---|---|---|---|
| Frequency   |   |   |   | 6 | 1 |   | 4 | 1 | 9 | 1 | 3 |   | 10 | 5 | 4 |   | 2 | 1 | 10 | 8 | 6 | 2 | 4 | 3 |   | 1 |
| Replacement |   |   |   |   |   |   |   |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |   |   |

12) [300 points] [Aristocrat] Extra 100 points if you can answer the question :)

BERD SRCD RCURY UCARYV YRDUKY UC PYKBY QKO TSUYH DES

KOUHUY KQ TKTR DSR?

|             | 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 |
|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency   | 1 | 2 | 4 | 5 | 2 |   |   | 2 |   |   | 6 |   |   |   | 2 | 1 | 2 | 8 | 4 | 3 | 7 | 1 |   |   | 8 |   |
| Replacement |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |



15) [300 points] [K1 Aristocrat] Solve this inspirational quote by Walt Whitman.

XOOI GJDC TPRO PYEPGK MJEPCS MVO KDAKVLAO - PAS

KVPSJEK ELYY TPYY QOVLAS GJD.

| K1          | 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 |
|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency   | 4 |   | 2 | 3 | 4 |   | 3 |   | 1 | 4 | 5 | 3 | 2 |   | 6 | 7 | 1 | 1 | 4 | 2 |   | 4 |   | 1 | 5 |   |
| Replacement |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

16) [300 points] [Aristocrat] An optimistic way of looking at common annoyances.

L ZUW'B WOOZ H PHLJXBKLB, FE GLKKUA ILYOX FO H WOA

PHLJXBKO OYOJE FUJWLWI.

|             | 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 |
|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency   | 2 | 4 |   |   | 4 | 3 | 1 | 4 | 2 | 4 | 4 | 7 |   |   | 8 | 2 |   |   |   |   | 3 |   | 5 | 4 | 2 | 2 |
| Replacement |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

AnotherPenguin's SSSS Codebusters Test

17) [400 points] [Erristocrat] Solve this quote that sounds as if it was recited from memory by a toddler.

OBCIBFFP DYKOG MYSF CP FG DBQSF PO JYKKX QYSG CG, P

XPK 'M MAB OAXQUPOM MBBS GK FX OAGF.

|             | 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 |
|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency   | 3 | 6 | 3 | 2 |   | 7 | 6 |   | 1 | 1 | 5 |   | 5 |   | 6 | 6 | 3 |   | 4 |   | 1 |   |   | 4 | 4 |   |
| Replacement |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

18) [600 points] [Patristocrat] Solve this quote by John F. Kennedy. The hint is the speaker himself.

AOGQU UIOHU ZUHUH QORUU KSKHQ SIJOG EJOEK JJUHQ

OUHQO MHQSK ZIKUH COGEV IOHQO LEMOO EILCV HCOGE

VIOHQ OLEMO QEMJ

|             | 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 |
|-------------|---|---|---|---|---|---|---|----|---|---|---|---|---|---|----|---|---|---|---|---|----|---|---|---|---|---|
| Frequency   | 1 |   | 3 |   | 8 |   | 4 | 11 | 6 | 5 | 5 | 3 | 4 |   | 16 |   | 9 | 1 | 3 |   | 10 | 3 |   |   |   | 2 |
| Replacement |   |   |   |   |   |   |   |    |   |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |

19) [500 points] [K1 Patristocrat] Solve this quote from Leo Tolstoy.

RHRDK APRFN VPXEA UMNOP QVPQF NRIAD YTSGF PAAPR

FNVPX EAUMN OPQVP QNVZE RYU

| K1          | 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 |
|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency   | 6 |   |   | 2 | 3 | 4 | 1 | 1 | 1 |   | 1 |   | 2 | 6 | 2 | 9 | 4 | 6 | 1 | 1 | 3 | 5 |   | 2 | 2 | 1 |
| Replacement |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

20) [600 points] [Xenocrypt] Darn it, Google Translate! Decrypt this song lyric that has been translated through several languages. Being a song lyric, the grammar is not completely correct here.

QPVS LT BZWWZNBWZ, DDZCPVZ QTLBSAT VSNVT. CSWASLSP

TQQSJZLBDP, VPJWZ VTLBPEP, VZ BTVZ DP QPWWZBZWP XPSN

JZ TWSAZL.

|             | A | B | C | D | E | F | G | H | I | J | K | L | M | N | Ñ | O | P  | Q | R | S | T | U | V | W | X | Y | Z  |
|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|---|---|---|---|---|---|---|---|---|----|
| Frequency   | 3 | 7 | 2 | 4 | 1 |   |   |   |   | 3 |   | 6 |   | 3 |   |   | 11 | 5 |   | 9 | 8 |   | 8 | 9 | 1 |   | 13 |
| Replacement |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |   |   |   |   |   |   |   |   |   |    |

AnotherPenguin's SSSS Codebusters Test

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21) **[200 points]** [Morbit] Solve this quote by Sergei Rachmaninoff. 1 = •-, 3 = ••, 5 = •x, 6 = x-, and 8 = x•.

9 8 1 8 3 8 5 4 4 2 3 8 3 2 5 4 6 9 8 1 6 4 8 3 5

8 1 5 9 7 1 5 8 7 8 4 5 3 8 1 5 5 7 3 6 7 5 6 3 5

3 7 7 8 7 8 4 5 3 8 1 5 5 7 3 6 7 5 8 5 3 5 6 5 9 7

7 8 6 5 9 7 3 7 9 5 3 3 2 3 4 6 9 8 4 2 9 8 1 8 3

8 5 4 4



22) **[300 points]** [Morbit] Time for some misheard lyrics (the grammar is still intact, but song lyrics not quite so). 1 = ●x, 2 = xx, 5 = -●, and 8 = -x.

4 1 4 4 3 6 9 7 9 5 1 5 1 9 1 3 5 9 1 4 7 9 2 4 8

7 5 2 6 8 7 1 9 4 9 4 1 6 8 4 8 7 4 3 4 2 4 2 7 6

9 7 9 4 3 2 5 8 1 1 7 5 2 5 5 9 4 1 7 9 4 9 1 5 3 5

2 7 5 9 3 1 6 1 4 8 4 3 1 4 1 9 9 4 8 1 5 2 4 9 7 1

9 1 8 9 5 1 1 7 3 4 9 4 2 5 3 6 9 6 9 4 1 1 7 1 1

3 6 9 5 2 7 8 6 8 4 8 7 4 3 4 2 4 3 2 5 4 9 2 7 2 7 8

7 9 4 3 9

23) **[250 points]** [Pollux] Solve this quote from Al Capone. 1 = -, 3 = x, 4 = ●, 7 = -, and 8 = x.

24885003577650997934942258287268125372355530113927130042

647316340097325480846588745280737084137043273602340238555

852

AnotherPenguin's SSSS Codebusters Test

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24) **[300 points]** [Pollux] Solve this quote by Albert Einstein. 1 = -, 2 = ●, 3 = x, 6 = -, and 7 = x.

**43961364680472255099369066582993356026235709936539512**

**8523127293182801055598238954012352355268509450925053054**

**362365238229505568640910690729274095682412355745235906**

**01964335634901958825381600120444367752975517512327096**

**01595846489210473605992728725601575505554828215095905**