

ACA Cipher Contest – Virtual Convention 2023 – Computer Solvers

Instructions:

- You have two hours in which to complete the contest. This contest runs from 4:15pm – 6:15pm Eastern. (1:15pm – 3:15pm Pacific, 8:15pm – 10:15pm UTC)
- Scoring for each CON is indicated in the table below.
 - Partial credit may be given at the discretion of the scorers.
- Before the end of the contest, submit your solutions to:
 - contest2023@cryptogram.org
- A Solutions Submission form is available for download from the page you downloaded the contest. It is a simple text file to help organize your solutions for submission.
- Although multiple submissions will be accepted, it is strongly encouraged that you only submit one set of solutions at the end of the contest.
- Scoring ties will be broken by solution submission times. If you make multiple submissions, your submission time will be the time of the last submission.
- No solutions will be accepted after the end of the contest.
- Good solving! Enjoy, and have fun!

Scoring:

FPT: Points for completing the Full Plain Text

Key: Points for submitting the Key

Rule: Points for submitting the Rule for a Null cipher

| Con | Total | Breakdown | |
|-----------------------------|-------|-----------------|--------|
| CC-1 Aristocrat | 7 | Key: 2 | FPT: 5 |
| CC-2 Aristocrat | 7 | Key: 2 | FPT: 5 |
| CC-3 Patristocrat | 9 | Key: 3 | FPT: 6 |
| CC-4 German Aristocrat | 9 | Key: 3 | FPT: 6 |
| CC-5 Columnar Transposition | 8 | Key: 3 | FPT: 5 |
| CC-6 Cryptarithm | 5 | Key: 5 | |
| CC-7 Null | 8 | Rule: 5 | FPT: 3 |
| CC-8 Baconian | 7 | FPT: 7 | |
| CC-9 Morbit | 9 | Key: 3 | FPT: 6 |
| CC-10 Ragbaby | 9 | Key: 3 | FPT: 6 |
| CC-11 Playfair | 11 | Key: 3 | FPT: 8 |
| CC-12 Fractionated Morse | 11 | Key: 3 | FPT: 8 |
| CC-13 Foursquare | 13 | Key: 4 (2 each) | FPT: 9 |
| CC-14 Bifid | 11 | Key: 3 | FPT: 8 |

Grand Total: 124 points

CC-1. Aristocrat. Arabian technique from 800 AD. K2

DARING FLAIR

NAMZEMWJD HWHUDDLQL RHL NQALG KMLJAQIMK ID *HU=TQWKQ ==

GPM VXLG WXGHIUM HKBHWJMVMWG QW GPM NQMUK XN

JADYGXOAHYPD EWGQU GPM GRMWGQMGP JMWGEAD.

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

Key: _____

CC-2. Aristocrat. Or by using a slave's shaved head. K1

DARING FLAIR

HA XCCHYHZA YZ YGD PBUYXKD, YGD *FODDJP BZABDXKDC

MOHRXYD LDPPXFDP WU XEEHTHAF X SXT BZRDOHAF ZO WU QPD

ZE YGD *MZKUWHQP PNQXOD.

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

Key: _____

CC-3. Patristocrat. Knitting secrets. K2 (stitches)

LATIN DUDE

KLPZY ZHXHU MPUYK WUAYA KGUQO XIEEZ HEKYN BPQNI EUBHU

QTAZY KAQOB PEHYZ YMXUH YNXZQ UGNPH UMNQU GUHHK WUH

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

Key: _____

CC-4. German Aristocrat. From Kasiski's "Secret Writing and the Art of Deciphering",
1863. K2 (schnell) [English key]

DARING FLAIR

SZTDT WTXTZCDRXBZVE WTHOTXBE STK GLBETZI, SODD COK PTZ

TZKZWTB FTPFKW DTZKT WTSOKUTK DRXKTII NF YOYZTB PBZKWTK

FKS SOD CZE RXZVVTBK WDRXBZTPTKT TPTK DL DRXKTII ITDTK

UOKK.

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

Key: _____

CC-5. Complete Columnar Transposition. An ironic event in the path of a notorious message. (unitedstates)

DARING FLAIR

IAENG OAUSW TSEPC HETAT XITTT SAVGF TMNRI EOEIA SIAEO

ZMLIN CVEDS NUTAI MNGVM TDNTA VNLHE EREMI INHEE EAYRF

Key: _____

CC-6. Cryptarithm. Multiplication. (Two words, 9-0)

LATIN DUDE

```
  HUNT
   FIT
  ----
 OYHRE
  TSTHI
 HRUIN
  ----
HISFFHF
```

Key: _____
9 8 7 6 5 4 3 2 1 0

CC-7. Null. Very Old (five)

LATIN DUDE

Lost kitten tried dragging heavy can, took ages for

Siamese caper behind Toyota. Strident theater patron

sees escapade, scribbles quaint jocular hokey note.

People softly voiced frivolous grievance. Cohorts

laughed under odd circumstances. Teenager predicts

abysmal victory.

Rule: _____

Solution: _____

CC-8. Baconian. Surprising use of a known antique. (caesar)

DARING FLAIR

KDDTX OAEWF BULDN JMXPW UFIQE EUAEM UYVQP PMHPQ OEEHU

UYDJN KLFZU WHHSF VDLUS TDOXE MLESN MDTNU XPUIA ELRUI

KMQAN DXIDH WMXIA HHQKL LBLAT LKNND QUSYG UMBIP FITDL

WTDAG LBMAL AOZPI GAJXH ZMNDT HGXUX

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

Solution: _____

A = aaaaa E = aabaa I/J = abaaa N = abbaa R = baaaa W = babaa
B = aaaab F = aabab K = abaab O = abbab S = baaab X = babab
C = aaaba G = aabba L = ababa P = abbba T = baaba Y = babba
D = aaabb H = aabbb M = ababb Q = abbbb U/V = baabb Z = babbb

CC-9. Morbit. Reverse alphabet. (used)

LATIN DUDE

18892 64487 69898 74678 93788 99526 16982 31678 45975

91689 57532 81877 57443 27546 76753 93714 98779 87758

95993 26957 65987 64877 1

Key:

. . . - - - x x x
. - x . - x . - x

Solution: _____

E: .

T: -

I: ..

A: .-

N: -. .

M: --

S: ...

U: ..-

R: .-. .

W: .--

D: -..

K: -.-

G: --. .

O: ---

H:

V: ...-

F: ..-. .

L: .-..

P: .--. .

J: .---

B: -... .

X: -.- .

C: -.-. .

Y: -.- .

Z: ---. .

Q: --.-

CC-10. Ragbaby. Ciphers in cuneiform? (craftsman's)

DARING FLAIR

SPGNYOIGLL *OBGWZZFITYME GPBE EBLVKGN FFBUTU LGMW WTHM

FUKA GVYLLK QYFP WBEPOVV HPOOW ZOIV WUVF ZFKGY. FFY

DSYTA V RWZCSNEQ'G WREHPS SMT NNTRCEA FLDRB.

| | | | | | | | | | | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 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 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 |

Key: _____

CC-11. Playfair. Ciphers for use by royalty. (ho mo ph on ic ci ph er)

DARING FLAIR

CP FE GW RB NE KY VI LT FP XM AB CL KA TA PC CM YB SO

HA SG KZ OZ RB YC CM PG RG VP GS BT TB VP MX GY CP ML

LD XE FN BY CL MF CP DF YH OX ZL

| | | | | |
|--|--|--|--|--|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Key: _____

CC-13 Foursquare. Misattribution. (Vigenere) (should now call it the) **LATIN DUDE**

XT FH ZE AX KU IH QQ SZ DQ IX HY IV CR CG PF IH BL QD

RO IY HM DO FV FF BT GU IP SE RS AS OO TE GP IH MQ GI

EQ UO IX BL BH YS DM TV NV QT TP PN IY BK OX IR KU SG

GP BS QQ HV SX GA RK FI LW HY

| | | | | | | | | | |
|---|---|---|----|---|---|---|---|----|---|
| a | b | c | d | e | | | | | |
| f | g | h | ij | k | | | | | |
| l | m | n | o | p | | | | | |
| q | r | s | t | u | | | | | |
| v | w | x | y | z | | | | | |
| | | | | | a | b | c | d | e |
| | | | | | f | g | h | ij | k |
| | | | | | l | m | n | o | p |
| | | | | | q | r | s | t | u |
| | | | | | v | w | x | y | z |

Keys: Top Right Square: _____

Bottom Left Square: _____

CC-14. Bifid. Invented by Charles Wheatstone. (cryptologic history)

LATIN DUDE

TCFWUXY FDEEWTP CARQRPK CFRQDHK ECETPUT TKAPAO TDRTZHN

LHTDFCR UKABPHO QMDCXXC EQUYBPQ GAROVPF TIYBDMH EOEFNDO

KMSMAPA PWGDPAN FRDNDRP AUFXPSI DDYC

| | | | | |
|--|--|--|--|--|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Key: _____