# Science Olympiad — CUSO 2025

chool Name:	Team Number: C

Warning: Do not open this packet until given permission to do so.

**Note:** There are useful notes after this page.

Names of participants: (Please print neatly)

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

Question	Value	Incorrect letters D	eduction	Score
Timed	153			
1	310			
2	348			
3★	263			
4	276			
5	217			
6	389			
7	243			
8	302			
9★	189			
10	250			
11	402			
12	511			
13	361			
14	346			
15	277			
16★	351			
17	231			
18	251			
19	274			
20	341			
21	341			
22	413			
23	222			
24	291			
25	175			
26	268			
27	211			
28	498			
29	284			
30	265			
Bonuses	Timed:	Special Bonus: ★ = 150; ★★ = 40	00; ★★★=	
Final Score		1		ļ

The following tables might be useful during the event.

	A	В	С	D	E	F	G	Н	I	J	K	L	М
A,B	N	0	Р	Q	R	S	Т	U	V	M	Х	Y	Ζ
C,D	0	Р	Q	R	S	Т	U	V	M	Χ	Y	Z	N
E,F	Р	Q	R	S	Т	U	V	W	Х	Y	Z	N	0
G,H	Q	R	S	Т	U	V	W	Х	Y	Z	N	0	Р
I,J	R	S	Т	U	V	W	Х	Y	Z	Ν	0	Р	Q
K,L	S	Т	U	V	W	Х	Y	Z	Ν	0	Р	Q	R
M,N	Т	U	V	W	Χ	Y	Z	N	0	Р	Q	R	S
О,Р	U	V	M	Χ	Y	Z	N	0	Р	Q	R	S	Т
Q,R	V	M	Х	Y	Z	N	0	Р	Q	R	S	Т	U
S,T	W	Х	Y	Z	N	0	Р	Q	R	S	Т	U	V
U,V	Χ	Y	Z	N	0	Р	Q	R	S	Т	U	V	M
W,X	Y	Z	N	0	Р	Q	R	S	Т	U	V	M	Х
Y,Z	Ζ	N	0	Р	Q	R	S	Т	U	V	W	Χ	Y

AAAAA	А	ABBAA	N
AAAAB	В	ABBAB	0
AAABA	С	ABBBA	Р
AAABB	D	ABBBB	Q
AABAA	E	BAAAA	R
AABAB	F	BAAAB	S
AABBA	G	BAABA	Т
AABBB	Н	BAABB	U/V
ABAAA	I/J	BABAA	W
ABAAB	K	BABAB	Χ
ABABA	L	BABBA	Y
ABABB	М	BABBB	Z

A	В	U	D	E	F	Đ	Н	I	J	K	L	M	N	0	P	Q	R	Ø	т	ם	٥	W	х	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	В	n	D	E	F	Đ	Н	I	J	K	L	М	N	0	P	Q	R	S	T	q	٧	M	х	Y	Z
Ζ	Y	Χ	W	V	U	Т	S	R	Q	Р	0	N	М	L	K	J	Ι	Н	G	F	Ε	D	С	В	А

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

# 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%	н -	5.49%	М -	2.53%	Y -	1.73%	J -	0.16%
0 -	7.60%	L -	4.14%	F -	2.30%	в -	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%	М -	3.08%	Y -	1.09%	z -	0.47%
A -	12.16%	L -	5.24%	P -	2.89%	V -	1.05%	Ñ -	0.17%
0 -	9.20%	D -	4.67%	в -	1.49%	G -	1.00%	x -	0.14%
s -	7.20%	т -	4.60%	н -	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, II, 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:

А	•-
В	-•••
С	-•-•
D	-••
Е	•

F	••-•
G	•
Н	••••
- 1	••
J	•

K	-•-
L	•-••
М	
N	-•
0	

Р	••
Q	•-
R	•-•
S	•••
Т	-

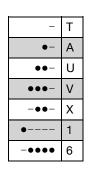
U	••-
٧	•••-
W	•
Χ	-••-
Υ	-•
Z	••
	V W X Y

0	
1	•

2	• •
3	•••

4	•••-
5	•••••

•	Е
••	_
•••	S
••••	Ι
-•••	В
	0
••••	5



-•	Ν
•-•	R
••-•	F
-•-•	C
••	2
••	7

	М
•	W
•-••	L
-•	Υ
•••	3
•	8

-••	D
●●	Р
••	Z
•••-	4
•	9

-•-	K
•	J
	Q





The following tables might be useful during the event.

	A	В	С	D	E	F	G	Н	I	J	K	L	М
A,B	N	0	Р	Q	R	S	Т	U	V	M	Х	Y	Ζ
C,D	0	Р	Q	R	S	Т	U	V	M	Χ	Y	Z	N
E,F	Р	Q	R	S	Т	U	V	W	Х	Y	Z	N	0
G,H	Q	R	S	Т	U	V	W	Х	Y	Z	N	0	Р
I,J	R	S	Т	U	V	W	Х	Y	Z	Ν	0	Р	Q
K,L	S	Т	U	V	W	Х	Y	Z	Ν	0	Р	Q	R
M,N	Т	U	V	W	Χ	Y	Z	N	0	Р	Q	R	S
О,Р	U	V	M	Χ	Y	Z	N	0	Р	Q	R	S	Т
Q,R	V	M	Х	Y	Z	N	0	Р	Q	R	S	Т	U
S,T	W	Х	Y	Z	N	0	Р	Q	R	S	Т	U	V
U,V	Χ	Y	Z	N	0	Р	Q	R	S	Т	U	V	M
W,X	Y	Z	N	0	Р	Q	R	S	Т	U	V	M	Х
Y,Z	Ζ	N	0	Р	Q	R	S	Т	U	V	W	Χ	Y

AAAAA	А	ABBAA	N
AAAAB	В	ABBAB	0
AAABA	С	ABBBA	Р
AAABB	D	ABBBB	Q
AABAA	E	BAAAA	R
AABAB	F	BAAAB	S
AABBA	G	BAABA	Т
AABBB	Н	BAABB	U/V
ABAAA	I/J	BABAA	W
ABAAB	K	BABAB	Χ
ABABA	L	BABBA	Y
ABABB	М	BABBB	Z

A	В	U	D	E	F	Đ	Н	I	J	K	L	M	N	0	P	Q	R	Ø	т	ם	٥	W	х	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	В	O	D	E	F	G	Н	I	J	K	L	М	N	0	P	Q	R	s	Т	а	v	W	х	Y	Z
	Z	Y	Χ	M	V	U	Т	S	R	Q	Р	0	N	М	L	K	J	Ι	Н	G	F	Ε	D	С	В	А

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

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I -	7.26%	D -	3.99%	P -	2.00%	V -	0.99%	z -	0.09%
N -	7.09%								

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0 -	9.20%	D -	4.67%	в -	1.49%	G -	1.00%	x -	0.14%
s -	7.20%	т -	4.60%	н -	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, II, 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:

А	•-
В	-•••
С	-•-•
D	-••
Е	•

F	••-•
G	•
Н	••••
- 1	••
J	•

K	-•-
L	•-••
М	
N	-•
0	

Р	••
Q	•-
R	•-•
S	•••
Т	-

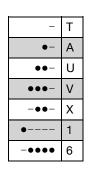
U	••-
٧	•••-
W	•
Χ	-••-
Υ	-•
Z	••
	V W X Y

0	
1	•

2	• •
3	•••

4	•••-
5	•••••

•	Е
••	_
•••	S
••••	Ι
-•••	В
	0
••••	5



-•	Ν
•-•	R
••-•	F
-•-•	C
••	2
••	7

	М
•	W
•-••	L
-•	Υ
•••	3
•	8

-••	D
●●	Р
••	Z
•••-	4
•	9

-•-	K
•	J
	Q





The following tables might be useful during the event.

	A	В	С	D	E	F	G	Н	I	J	K	L	М
A,B	N	0	Р	Q	R	S	Т	U	V	M	Х	Y	Ζ
C,D	0	Р	Q	R	S	Т	U	V	M	Χ	Y	Z	N
E,F	Р	Q	R	S	Т	U	V	W	Х	Y	Z	N	0
G,H	Q	R	S	Т	U	V	W	Х	Y	Z	N	0	Р
I,J	R	S	Т	U	V	W	Х	Y	Z	Ν	0	Р	Q
K,L	S	Т	U	V	W	Х	Y	Z	Ν	0	Р	Q	R
M,N	Т	U	V	W	Χ	Y	Z	N	0	Р	Q	R	S
О,Р	U	V	M	Χ	Y	Z	N	0	Р	Q	R	S	Т
Q,R	V	M	Х	Y	Z	N	0	Р	Q	R	S	Т	U
S,T	W	Х	Y	Z	N	0	Р	Q	R	S	Т	U	V
U,V	Χ	Y	Z	N	0	Р	Q	R	S	Т	U	V	M
W,X	Y	Z	N	0	Р	Q	R	S	Т	U	V	M	Х
Y,Z	Ζ	N	0	Р	Q	R	S	Т	U	V	W	Χ	Y

AAAAA	А	ABBAA	N
AAAAB	В	ABBAB	0
AAABA	С	ABBBA	Р
AAABB	D	ABBBB	Q
AABAA	E	BAAAA	R
AABAB	F	BAAAB	S
AABBA	G	BAABA	Т
AABBB	Н	BAABB	U/V
ABAAA	I/J	BABAA	W
ABAAB	K	BABAB	Χ
ABABA	L	BABBA	Y
ABABB	М	BABBB	Z

A	В	U	D	E	F	Đ	Н	I	J	K	L	M	N	0	P	Q	R	Ø	т	ם	٥	W	х	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	В	n	D	E	F	Đ	Н	I	J	K	L	М	N	0	P	Q	R	S	T	q	٧	M	х	Y	Z
Ζ	Y	Χ	W	V	U	Т	S	R	Q	Р	0	N	М	L	K	J	Ι	Н	G	F	Ε	D	С	В	А

		5									
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s -	7.20%	т -	4.60%	н -	1.18%	F -	0.69%	K -	0.11%
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# Morse Code:

А	•-
В	-•••
С	-•-•
D	-••
Е	•

F	••-•
G	•
Н	••••
- 1	••
J	•

K	-•-
L	•-••
М	
N	-•
0	

Р	••
Q	•-
R	•-•
S	•••
Т	-

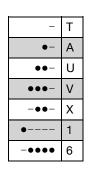
U	••-
٧	•••-
W	•
Χ	-••-
Υ	-•
Z	••
	V W X Y

0	
1	•

2	• •
3	•••

4	•••-
5	•••••

•	Е
••	_
•••	S
••••	Ι
-•••	В
	0
••••	5



-•	Ν
•-•	R
••-•	F
-•-•	C
••	2
••	7

	М
•	W
•-••	L
-•	Υ
•••	3
•	8

-••	D
●●	Р
••	Z
•••-	4
•	9

-•-	K
•	J
	Q





Timed Question [153 points] Solve this Aristocrat. When you have solved it, raise your hand so that the time can be recorded and the solution checked.

### VNB TQ HPBY CNS, E WNCKEZFB KIHHFB PK P YIBCHEMF

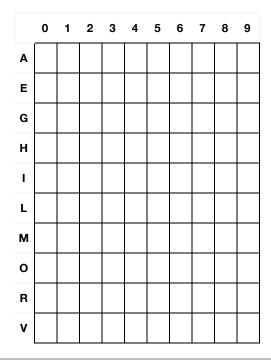
### YOBNIJO SOEWO NCF TIKY HPKK, EC NBZFB YN JFY YN LFZ.

	A	В	С	D	E	F	G	н	I	J	ĸ	L	М	N	0	P	Q	R	ຜ	T	ŭ	v	W	x	Y	Z
Frequency		8	5		5	7		5	4	2	6	1	1	8	4	4	1		2	2		1	2		7	3
Replacement																										

1) [310 points] The following Cryptarithm provides the key to decoding the values 01324 23571. What do they decode to?

CUSO 2025

Va	lu	es	to	de	eco	od	e ·	for	S	olι	ıtior	1
0	1	3	2	4		2	3	5	7	1		
					Ī							
											1	_
Cr	уp	ta	ritl	nm	fc	rr	nu	la				
			Н	0	M	E	<b>C</b> :	R				
		R	0	A	R	·	<b>c</b> :	E				
_		. 7			_	_		_				
		V	Ľ	R	G		L	ட				



<sup>2) [348</sup> points] A piece of life advice has been encoded as a K2 Aristocrat for you to solve. What was the keyword used to encode it? (You will only receive credit for the keyword. You do not need to solve the quote or fill out the frequency table.)

Enter	the	Keyword	here

1		

Cipher:

GZFGCZ FSKZE JUR KAUK DFKPMUKPFE XFZJE'K CUJK. NZCC,

EZPKAZI XFZJ VUKAPEO - KAUK'J NAR NZ IZWFDDZEX PK

XUPCR.

Replacement																										
K2	A	В	С	D	E	F	G	Н	I	J	ĸ	L	М	N	0	P	Q	R	ß	T	U	V	W	x	Y	z
Frequency	5		5	3	6	7	2		2	5	12		1	3	1	6		3	1		7	1	1	4		11

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★(Special Bonus Question) 3) [263 points] Solve this Porta, a quote from Dr. Seuss. The key used was 6 letters long, and the quote begins with SOM.

F	F	R	V	A	Y	Z	N	A	С	N	U	D	L	W	В	A	Y	В	E	A	R	L	U	P	F	R	L	R	Y
P	W	В	V	W	Q	A	Z	В	Y	x	Q	A	J	E	v	L	С	N	I	W	В	0	P	С	U	W			
						<del> </del>	+				$\vdash$	-	<del>                                     </del>					-	+	l -				-	<del>                                     </del>				

<sup>4) [276</sup> points] Solve this Aristocrat, a quote from an aerospace engineer.

#### EC FIHC ZCZVSBMCZ MI FBOVKJ WIDVZ BSNVCUCFCKMW MNBK

VK HAKKVKJ BLMCH WQVLM EAM WTKMNCMVS NBRRVKCWW.

	A	В	С	D	E	F	G	н	I	J	ĸ	L	М	N	0	P	Q	R	s	T	U	v	W	х	Y	Z
Frequency	2	6	10	1	2	3		3	3	2	9	2	9	4	1		1	2	3	1	1	9	6			4
Replacement																										

5) [217 points] Solve this Hill, a quote from the lesser-known school song of a certain university. It has been encoded using a keyword of LION.

$$\begin{pmatrix} L & I \\ O & N \end{pmatrix} \equiv \begin{pmatrix} 11 & 8 \\ 14 & 13 \end{pmatrix}$$

F	Т	N	E	I	U	V	Н	F	U	М	F	E	В	Q	M	M	В	N	G	I	M

GCQC GVFVOCG APBCG IAÑ JVM VA QÑ JPUÑ. GPA VOSÑFWC,

GPVODFV DCUFVOCG UPGNFIHÑF UV QÑ PAOÑUIFVM.

K1	A	В	С	D	E	F	G	Н	I	J	ĸ	L	М	N	Ñ	0	P	Q	R	S	Т	U	v	W	х	Y	Z
Frequency	5	1	7	2		7	8	1	3	2			2	1	7	5	6	3		1		5	10	1			
Replacement																											

<sup>6) [389</sup> points] Solve this K1 Spanish Aristocrat, a somewhat comforting quote. It has been encoded using a K1 alphabet and an English keyword.

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7) [243 points] Solve this Baconian, an inspiring quote from Elon Musk.

8) [302 points] Solve this K1 Aristocrat, a quote from Ludwig Wittgenstein.

HVX DVL MI VPVFAX MI PIXZAU - VXZ LI JAUDVJL ZI

JAIJGAL. LYWAXYA WL V PVR IB LAXZWXC DWH MI LGAAJ

VCVWX.

K1	A	В	С	D	E	F	G	н	I	J	ĸ	L	М	N	0	P	Q	R	s	T	ŭ	v	W	x	Y	Z
Frequency	10	1	2	3		1	2	2	8	5		8	3			3		1			2	10	5	8	2	4
Replacement																										

★(Special Bonus Question) 9) [189 points] Solve this Nihilist, a rousing statement by a certain Columbia alum. It has been encoded using a keyword of BARACK and a Polybius key of OBAMA.

87 36 66 47 24 69 55 43 64 57 78 55

	1	2	3	4	5
1					
2					
3					
4					
5					

34 45 56 68 65 64 45 35 58 43 34 ?

### NZOOY WHFO WO KODGOBO NEHN IO PHV HDYU ZOVOI HVQ

ZOYEHXO UCZ DGBOY, VU WHNNOZ IEHN IO LHPO GV DGLO.

	A	В	С	D	E	F	G	н	I	J	ĸ	L	М	N	0	P	Q	R	s	т	U	v	W	х	Y	Z
Frequency		2	1	4	3	1	4	9	4		1	2		6	17	2	1				3	5	3	1	4	5
Replacement																										

<sup>10) [250</sup> points] Solve this Aristocrat.

11) [402 points] Solve this Nihilist, the alleged last words of a flight-inclined Columbia alum. The quote begins with WE ARE ON and was encoded with a Polybius key of RADIO. The (non-Polybius) keyword is 5 letters long.

94 35 34 74 37 56 27 66 63 37

	1	2	3	4	5
1					
2					
3					
4					
5					

55 44 37 55 , 39 56 44 37 57 29 56 54 66 63

26 57 34 65 46 59 86 43 .

#### GNWCD ZXDJD QZOWN RGOFZ YPTRF WRZVR FGVOJ GXYOF

#### DOPXD WEOFG VGVOF DVWXY OFZOX DQDND XCVLP OOGXY

#### OFZOW XKDBW KDWXC PCD

K1	A	В	С	D	E	F	G	н	I	J	ĸ	L	M	N	0	P	Q	R	s	T	Ū	v	W	х	Y	Z
Frequency		1	4	12	1	8	7			2	2	1		3	13	4	2	4		1		6	8	9	4	6
Replacement																										

<sup>12) [511</sup> points] Solve this K1 Patristocrat, a derisive quote from everyone's favorite pop star.

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13) [361 points] Solve this Complete Columnar, a mildly funny joke. You are told that the quote has SANDAL somewhere in it.

#### TFLOR OAOAR ATTSS GOAHE DFENW PNOWE YADSP D

Answer:	

#### GBG BPFF IGAGW NPIGJ YOKY FPNG NTZW BOPMO GBG KWG

#### FTTRPIH. JKIMG KIJ LG SKWWD; NTWG YOPX YTT PX YOG

FTY TN SKI.

K1	A	В	С	D	E	F	G	н	I	J	ĸ	L	М	N	0	P	Q	R	s	T	υ	v	W	x	Y	Z
Frequency	1	4		1		5	13	1	6	3	6	1	2	5	5	7		1	2	8			6	2	6	1
Replacement																										

<sup>14) [346</sup> points] Solve this misspelled K1 Aristocrat, a quote from one of many, many required readings.

**CUSO 2025** 

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15) [277 points] Solve this Complete Columnar, a quote from a rather obscure reading. You are told that the quote has **DELIGHT** somewhere in it (which is not how this test writer felt while reading it).

EHROX LXTTI OUIXE FISEH XLLTN HDTHO SNDGX IIHGE

DXKGE MEEX

★(Special Bonus Question) 16) [351 points] Solve this **Baconian**, a quote about the possessions of a Columbia-graduated founding father. You are told that the plaintext ends with **RAIN**.

A CASE A KING A PLAN BE OLD ALPHA A BABY ACRES A KING

BACK A ACRES A CALL A BOOK BE ITS BACON A CASE ABBEY

A CALL A CASE BE ITS A PLAN ALPHA ABBEY A PLAN BE ITS

A KING EARTH A GOOD BACK A A CASE A BOOK ABBEY

17) [231 points] Solve this Aristocrat, yet another imperative about life.

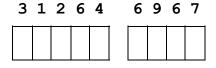
#### WMTXO WHWVO FUIZW IMZ MWY FWMFIJNXM JUIJ GXLWF YNJU

### NJ, LICNMQ OXB EWWK IKNHW.

	A	В	С	D	E	F	G	н	I	J	ĸ	L	М	N	0	P	Q	R	s	т	υ	v	W	х	Y	Z
Frequency		1	1		1	4	1	2	6	5	2	2	6	5	3		1			1	3	1	10	4	2	2
Replacement																										

18) [251 points] The following Cryptarithm provides the key to decoding the values 31264 6967. What do they decode to?

## Values to decode for solution



Cryptarithm formula

S T U D Y

+ T H E S I S

D E G R E E

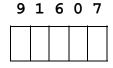
	0	1	2	3	4	5	6	7	8	9
A										
В										
С										
D										
E										
F										
G										
н										
ı										
J										
М										
N										
0										
P										
R										
s										
Т										
U										
Y										

19) [274 points] Solve this Baconian, a quote from Mark Twain concerning a part of speech.

AXZOAOZXAX

20) [341 points] The following Cryptarithm features remarkably ugly buildings and provides the key to decoding the values 91607. What do they decode to?

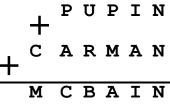
Values to decode for solution



Cryptarithm formula



MUDD



	0	1	2	3	4	5	6	7	8	9
A										
В										
С										
D										
ı										
M										
N										
P										
R										
U										

21) [341 points] Solve this K1 Spanish Xenocrypt, which was encoded using a K1 alphabet and an English keyword.

## QG VZJ XJ UÑJWKJ JS ZS QZFHW XJ MGRUJSXH MGS QG VZJ

### XJ GLYÑJSJ JS GYWG. NWHMHXHW JS ZSH GMHXÑGS D

### YWNZSNHW JS QH GYWH.

K1	A	В	С	D	E	F	G	н	I	J	ĸ	L	М	N	Ñ	0	P	Q	R	S	Т	U	v	W	х	Y	Z
Frequency				1		1	10	10		14	1	1	4	2	4			4	1	11		2	2	8	6	4	6
Replacement																											

22) **[413 points]** Solve this **Fractionated Morse**, a quote from Albert Einstein. You are told that the quote has **EVERY** in it corresponding to the encoded text **T N U P V J**, with  $\mathbf{T} = \mathbf{0} \times \mathbf{0}$ .

POJHVMBUTGYOOWM

F C K C P U R V V A D L J N

YJSPTB

YCFBUPQORVVA

TNUPVJKIQVWA

B T X K R A

Replacement																										
Warra	•	•	•	•	•	•	•	•	•	_	_	_	_	_	_	_	-	_	×	×	×	×	×	×	×	×
Morse fraction	•	•	•	_	-	_	×	×	×	•	•	•	_	_	-	×	×	×	•	•	•	-	-	-	×	×
Traction	•	-	×	•	-	×	•	-	×	•	_	×	•	_	×	•	-	×	•	-	×	•	_	×	•	-

23) [222 points] Solve this Porta, a quote from the immortal J.R.R. Tolkien. It has been encoded using the key ELVES.

Ç	С	J	x	E	]	E	Z	0	Т	E	s	W	L	Т	E	s	s	Н	Z	E	Т	A	I	0	L	Γ	E	3 F	' P	J	Ι	)

24) [291 points] Solve this K2 Aristocrat, a piece of advice for those visiting lesser-known schools.

#### Q PIBM SDRV AMVDAXML NAYW JYRVYX. QV QR VPM YXUF

#### RIXM VPQXO VY LY QN FYD NQXL FYDARMUN LYCX VPMAM.

Replacement																										
К2	A	В	С	D	E	F	G	н	I	J	ĸ	L	М	N	0	P	Q	R	ß	T	ם	V	W	x	Y	Z
Frequency	5	1	1	4		3			2	1		4	8	4	1	4	6	5	1		2	8	1	7	9	

25) [175 points] Solve this Hill, a verse from the New Testament (more readings, yay!). The quote has been encoded with keyword TEST.

$$\begin{pmatrix} T & E \\ S & T \end{pmatrix} \equiv \begin{pmatrix} 19 & 4 \\ 18 & 19 \end{pmatrix}$$

W	В	ຜ	В	Z	N	J	S	L	K	С	W	С	Х	W	R	D	W	В	I	A	T

26) <b>[268 points]</b> Solve this <b>K</b> for the keyword.)	1 Aristocrat, a quote from K	elly Martin. <b>What was th</b>	e keyword used to enco	de it? (You will only receive credit
Enter the Keyword here				

THG'M EXM AHSE LXMMVGA YXWHFX BXSUQ OXVABML. KXFSVG

ZEXPVYEX SGT SEEHO KHHF ZHK VGMNVMVUX WBSGAXL.

K1	A	В	С	D	E	F	G	н	I	J	ĸ	L	М	N	0	P	Q	R	S	T	ŭ	٧	W	х	Y	Z
Frequency	4	3			6	3	6	7			3	3	7	1	2	1	1		6	2	2	7	2	11	2	2
Replacement																										

<sup>27) [211</sup> points] Solve this Complete Columnar. You are told that the quote has LURE somewhere in it.

EDUMG WUHTX USAEA IORTE CAICN TYEMR SSFRE OHAAT

CNLOD SOTAS

Cipher:

28) **[498 points]** Solve this **K1 Patristocrat**, a quote which could be useful to some of you this coming February. You are told that the sequence **ORWC** decrypts to **LOVE**.

#### FBCGC UFORW CUFRE LCUDE CQRFF BRUCL QXBLH BORWC

#### LURQO ZUSRN CQGVF FBRUC LQXBL HBLFL UDHFC IVSRQ

K1	A	В	С	D	E	F	G	н	I	J	ĸ	L	M	N	0	P	Q	R	S	T	U	v	W	х	Y	Z
Frequency		7	10	2	2	9	2	3	1			8		1	3		6	9	2		8	2	2	2		1
Replacement																										

<sup>29) [284</sup> points] Solve this misspelled Aristocrat, a quote from Brandon Sanderson.

#### FFJ PCM CGCEOAU IBP GCAR WBBNM PBA HBDYL SFFJ OAJB C

#### QBBG, CMMDGOAU PBA LOLA'J PBAJ JBB GBTF CQBDAL TFQR

#### GDHI.

	A	В	С	D	E	F	G	н	I	J	K	L	М	N	0	P	Q	R	s	т	υ	v	W	х	Y	Z
Frequency	9	14	7	4	1	6	6	2	2	6		4	4	1	4	5	3	2	1	2	2		1		1	
Replacement																										

30) [265 points] Solve this Aristocrat, a timeless observation about travel.

### LATB IXZ FTUGT BTL IXSQ, IXZ UST UHVXBNHATY UV AXL

#### MFTUB VAT STHV XC VAT LXSFY NH. MFTUB NH BXV TBXZEA.

	A	В	C	D	E	F	Ω	н	I	J	ĸ	L	М	N	0	P	Ŋ	R	s	т	ט	v	W	x	Y	Z
Frequency	6	7	1		1	4	1	5	3			4	2	3			1		4	12	6	6		9	2	3
Replacement																										