

Codebusters B - Winter Codebusters - December 19 SO Practice - 12-19-2020

Codebusters B

Virtual Country-wide Scilympiad Practice 2

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Hello and welcome to Scilympiad! Hopefully, this test will display how future Codebusters tests will be like in the near future. Hope you guys have a wonderful winter!

- Make sure you have read the rules and have downloaded this reference sheet (<https://scilympiad.com/Data/shared/testRefs/CodebustersReference.pdf>).
- You will have **50 minutes** to complete **17 questions**
- There is a **TIMED QUESTION**. To earn bonus points, click submit answer at the end of the question and it will tell you if it is correct or not.
- Tiebreakers are xenocrypts, patristocrats, and aristocrats in descending value order. After that teams that earn the same score will earn the same rank.
- Feel free to set up a communication call with your team members such as FaceTime, Zoom, or Discord.

If you have any questions or feedback about the exam, feel free to email me at martinnguyen@utexas.edu.

1. (350.00 pts)

Solve this **ARISTOCRAT** that actually does not have anything to do with winter but rather about a SKILL which is a quote by Brian Tracy. Make sure only one person is entering the letters or else your progress might be written over. Make sure to press SUBMIT when you think you have the correct solution. The system will notify you if your answer is correct and you will receive the appropriate time bonus.

	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	10	3	6	18	1	11	11	6	0	4	9	3	12	0	0	2	2	4	0	9	10	2	3	1	8	2	3
Replacement																											

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

H	M	L	L	C	X	D	H	G	F	D	M	X	D	B	G	B	Z	D	T	T	F	U	G	F	K	M	C	H	G	X	T	S	G	A	X	.		
D	F	'	B	T	D	Z	S	A	D	Y	D	X	V	G	W	D	H	K	H	T	S	M	A	F	K	J	D	X	V	.	D	Q	K	M	C	'	A	S
O	D	T	T	D	X	V	F	M	O	M	A	Z	G	F	D	F	,	K	M	C	H	G	X	A	G	J	D	Y	T	K	D	L	J	A	M	P	S	
F	U	S	E	C	G	T	D	F	K	M	Q	S	P	S	A	K	J	G	A	F	M	Q	K	M	C	A	T	D	Q	S	.							

2. (75.00 pts) Solve this **ATBASH** cipher from John J. Geddes that refers to a wonderful night.

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

U	I	V	H	S	O	B	X	F	G	X	S	I	R	H	G	N	Z	H	G	I	V	V	H	,	H	N	V	O	O	R	M	T	H	L	U	
H	G	Z	I	H	Z	M	W	H	M	L	D	Z	M	W	K	R	M	V	I	V	H	R	M	-	R	M	S	Z	O	V	W	V	V	K	O	B
Z	M	W	U	R	O	O	B	L	F	I	H	L	F	O	D	R	G	S	D	R	M	G	I	B	M	R	T	S	G	.						

Z	M	W	U	R	O	O	B	L	F	I	H	L	F	O	D	R	G	S	D	R	M	G	I	B	M	R	T	S	G	.

3. (75.00 pts) Solve this **CAESAR** cipher from Prabhas that talks about a chilly season.

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

R	Y	F	C	Z	U	R	P	Z	J	R	E	F	G	G	F	I	K	L	E	Z	K	P	K	F	A	F	L	I	E	V	P	N	Z	K	Y	Z	E	.

Z	K	Z	J	R	C	J	F	R	T	Y	R	E	T	V	K	F	T	Y	Z	C	C	,	K	F	I	V	C	R	O	.	Z	K	Z	J

N	Y	V	E	Z	J	N	Z	K	T	Y	F	E	D	P	I	V	J	K	D	F	U	V	.

4. (100.00 pts) Solve this **AFFINE** cipher which is about something cold. You know that $a = 13$ and $b = 4$.

The question was originally written with $a = 13$ and is thus thrown out. **The correct value of a is 11.**

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

V	C	B	W	O	U	V	O	K	W	E	R	O	A	W	A	Q	P	W	F	D	W	D	E	J	L	W	J	I	C	Q	D	C	V	L	C	R	F	C	O	F							

F	D	W	H	E	U	F	W	J	O	F	M	O	V	V	L	O	U	E	N	N	W	E	J

5. (100.00 pts) Encrypt this quote by John Steinbeck with the **AFFINE** cipher with $a = 19$ and $b = 20$.

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

W	H	A	T	G	O	O	D	I	S	T	H	E	W	A	R	M	T	H	O	F	S	U	M	M	E	R

W	I	T	H	O	U	T	T	H	E	C	O	L	D	O	F	W	I	N	T	E	R	T	O	G	I	V	E	I	T	S	W	E	E	T	N	E	S	S				

6. (250.00 pts) Solve this **VIGENERE** cipher from Thomas Wentworth Higginson which needs to be decoded with the keyword **SNOWING**.

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

Z	B	K	I	I	A	E	D	R	G	O	W	A	Y	G	S	T	W	Q	G	N	S	A	R	X	M	N	A	L	L	K	A	A	U	U	M	Y	R		

H	W	F	K	,	A	S	H	D	M	E	K	O	R	F	A	V	B	C	A	A	H	A	Z	V	T	G	H	F	U	M	N	X	!

7. (300.00 pts) Encode this quote with the **VIGENERE** cipher with the keyword of POPCORN.

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

D	O	N	'	T	M	I	N	D	M	E	.	I	'	L	L	J	U	S	T	B	E	O	V	E	R	H	E	R	E	C	R	Y	I	N	G	,
C	R	A	F	T	I	N	G	,	A	N	D	W	A	T	C	H	I	N	G	H	A	L	L	M	A	R	K	C	H	R	I	S	T	M	A	S
M	O	V	I	E	S	.																														

8. (250.00 pts) Solve this **BACONIAN** cipher which is a quote from Hal Borland. Might want to check your keyboard on this one!

!)*(!@^%\$)(*!% (@!%(!^\$%()!%*(!%@(! ^%(!% (\$!)% (!%(!
 %(!@ ^%(\$!) %(!% (@!^% \$)(*@ !%(!% (^!%\$ (!)*% (@!%^ (!%
 !\$)%(! *@%^ \$(!%) (*@! \$%(!% (!%(! *@%(!%^\$()!%(* !@%(^
 !\$%(! %)*@(^!%(\$!)%(! *%(@! ^%(!\$)%(*! @%(^\$)!%(! %)*@(!

9. (150.00 pts) Solve this **RAILFENCE** cipher. You are told that 4 rails were used to encode it.

WSOTIOMOLHTNYUEWOCHVRANWESEIOSHVOHESEOKSAGNWACSLN

10. (150.00 pts) A quote has been encoded using the **MORBIT** Cipher for you to decode. You are told that 3=×●, 2=-●, 4=●●, 7=×-, 5=××, 8=●×.

6983968832847635654827131
 36864392983964328743842368
 8688275478713632519692524
 339499436849645696769

11. (150.00 pts) A quote by Lucy Larcom has been encoded using the **POLLUX** Cipher for you to decode. You are told that 8=x, 7=x, 4=, 6=, 2=, 1=.

1393161086851139100344944283618141572538713573759229353

9943657442716130435984064680212402460314096347130259455

752557377154593501639195518069622705248369325924783184

12. (350.00 pts) Solve this **ARISTOCRAT**.

	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	5	0	5	2	5	11	1	12	8	3	4	8	1	1	0	12	14	4	6	4	2	0	3	4	19	0	0
Replacement																											

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

E	W	A	L	F	T	P	R	X	I	X	I	Q	X	V	L	O	J	P	L	S	X	I	H	D	K	X	O	A	,	P	O	N	X						
O	E	C	O	F	P	O	T	X	H	D	P	R	X	H	Q	Q	H	A	P	W	F	L	P	K	K	H	W	R	O	C	X	P	H	I	Q	X	F	E	
P	L	S	X	G	L	P	R	J	H	C	X	E	H	F	X	I	,	R	O	C	X	A	X	O	J	V	H	F	C	X	A	I	O	P	L	H	F	I	
O	F	E	X	F	M	H	K	O	W	P	R	X	F	P	L	V	S	H	S	X	F	P	I	.															

13. (450.00 pts) Solve this **ARISTOCRAT** by Edith Sitwell.

	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	8	7	0	3	2	12	12	2	5	8	0	1	10	2	0	10	0	0	1	1	0	1	5	9	0	1	14
Replacement																											

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

H	W	V	G	F	O	W	D	G	A	F	G	W	I	F	M	Z	O	N	Z	I	M	Z	O	G	,	M	Z	O	Y	Z	Z	B	M	Z	Z	B
J	V	B	H	J	O	I	G	A	,	M	Z	O	G	A	F	G	Z	S	N	A	Z	M	J	M	O	W	F	V	B	E	U	A	J	V	B	

R	M	J	Q	R	B	M	Y	G	U	D	R	U	W	O	G	B	Z	D	V	R	H	M	R	I	J

17. (600.00 pts) Solve this XENOCRYPT to enjoy the holidays!

	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	13	3	0	2	1	1	2	10	5	4	1	7	1	4	0	4	1	0	1	1	1	7	1	0	1	6	4
Replacement																											

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

X	N	A	D	H	M	H	G	F	A	D	H	O	L	Y	Y	A	B	U	A	U	A	U	Z	N	T	L	S	H	Y	A	I	Z	H	

U	H	E	B	J	H	J	,	K	L	U	O	B	I	O	A	P	L	Y	A	I	J	A	I	A	L	I	Z	A	O	H	U	J	L	N	U
							,																												

R	N	A	Y	Z	A	H	V	Y	H	G	L	.
												.

Congratulations on completing the exam! If you have any questions or feedback about the exam, feel free to email me at martinmnguyen@utexas.edu.