This test is designed to evaluate your ability to crack codes. If you solve a question, write the decrypted answer on the paper provided. Putting punctuation in answers is optional.

When numbers are used to represent letters, the letters are 0-indexed (A=0, B=1, ... Z=25), in base 36, or ASCII character codes. All Playfair ciphers exclude J as per standard.

∼∼∼∼∼∼∼∼ *Good luck, and have fun!* ∼∼∼∼∼∼∼∼

Section 1: Standard Fare

Each question in this section involves a common, easy-to-crack encoding method.

1) `EHTTSRIFNOITSEUQFOASEDOCDNASREHPICTSETSISYAWLANETTIRWSDRAWKCAB` 1 pt

2) `"Yjcv ecp vjku uvtcpig fgxkeg dg? Yjgp K vqwej kv, kv ikxgu hqtvj c uqwpf."` – `Pgkn Rgctv` 1 pt

3) `"Ql sgfu ql ngx'kt ukttf ngx eqf'z tleqht! Xfstll ngx stqkf zg yqet rqfutk itqr-gf... Ngx vgf'z sqlz q ltegfr quqoflz dt!"` – **XFR*N*FT** 2 pts

4) `"BC LS LC WH XK LB CX RL QZ MV XP GM PI"` – `OL KR WD GB CP SF` 1 pt

5) ←⇓→ / ⇓→⇑ / ←↓→↓← / ⇑←⇒ / →⇓←⇑ / ⇑→⇓⇑→⇓ / ⇑ / →↙→ / ←↓→←↓→ 1 pt

6) ⌜⊏ ⊏⊡□ ∀⌜∨⊓□∨ >⊏ ⊏⊔>⌟⌜⊡ ∨⊏⊐□>⊓⌜⊡⌝, 1 pt
∨⊏⊐□>⊓⌜⊡⌝ ⊏⊏ □⊓<⌟⊾ ∧⌟⊾<□ ⊐<∨> ⊔□ ⌝⌜∧□⊡.

Section 2: Binary Puzzle

`01010100 01101000 01101001 01110011 00100000 01101001 01110011 00100000`
`01100001 00100000 01110010 01100101 01100100 00100000 01101000 01100101`
`01110010 01110010 01101001 01101110 01100111`

7) `0028` 2 pts
`011400411300310061150`
`0100310021003100210081003`
`01140031003100210081003`
`0100310021003100210081003`
`011400411300311500041003`
`0028`

8) `10 01 01 11 10 11 // 10 10 11 00 00 10 // 00 00 10 10 00 10` 2 pts

9) $\overline{B} \leftrightarrow < \vee \wedge \downarrow \overline{A} > \leftarrow \downarrow 0 \overline{A} A 1 \wedge$ 3 pts

Hint: A = 1100, → = 1011; $[4 \Longrightarrow 5]$

10) "KEEP TALKING!" yells Seth as he frantically cuts wires on a bomb, the timer running low. "ADLZGJUMIMDT" says Caleb, and Greg replies "UOGIMCROYGAE," to Seth's confusion. "AND?" Seth adds. "Oh, I see," says Trevor, smirking. "With E equals 0 and T equals 1, the answer is–" the video feed cuts before you can hear Trevor's solution. 3 pts

AB	•	–
00	X	–
01	–	•
10	•	–
11	•	X

Section 3: Fun and Games

Well, this whole test is fun... but this section is especially so!
I hope...

11) `GoL: B3/S23` 3 pts

AN	**BL**	**TI**	**RH**	**TP**	**WA**
OS	**GI**	**CL**	**ED**	**NO**	**VN**
EU	**KG**	**HO**	**YR**	**TB**	**ET**
SF	**ME**	**DO**	**RA**	**XN**	**RK**
AZ	**GN**	**TM**	**HY**	**MD**	**IS**
IU	**LE**	**DS**	**OA**	**NN**	**ST**

12) 3 pts

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

13) *Akari*: Place lightbulbs in the grid such that every white cell either has a lightbulb in it or is in the same row or column as a lightbulb with no black cell between them. Black cells with numbers indicate the number of orthogonally adjacent lightbulbs to that cell. Lightbulbs cannot be in the same row or column without being separated by a black cell. 2 pts

G		F	D		A	L	1	R	I	2	O	G	F
H	1	E	H	P		I	C	X	V	T		1	
R		E	H	S	P	I	C	E	T	I	R	W	R
	E	D	O	2	1	1	U	N	U	T	X	E	T
T	W	Y	E		A	K	2	N	1		R	D	2
A	S	W	O	R	N	A	I	D	R	0	O	2	W
0	E	Z	I	0	T	E	B	A	A	2	H	P	L
A	Y	D		R	O	W	W	Y	3	E	E	K	
G	3	G	0	N	A	R	R	A	O	E	R	D	N
	D	N	1		M		U	L		O	C	A	E
U	I	B	V	Y	L	O				P	I	S	0
E	H	D	T	I	W	E	R	A	U	Q	S		S
	1	1	G	N	I	D	C	3	R	O	C	0	N
E	O	S		F	A		R	T		H	P	1	💡

Section 4: "Schlussfolgerungen Ziehen"

S-pr-ic-hst d-u "Deutsch"?

Nope, it's all an enigma to me. Maybe question 13 can help?

14) `RABRKHCIA` 2 pts

```
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

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

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

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

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

15) `"FA GD VG GD FG AF GA XF AV AD DF VA DA GX VD FD AF GF AG AA VF"` 3 pts

Name: _____

ID: _____

School: _____

Input your decrypted answers on these lines. The scoring column is for graders only. Scoring

1) _____ ___ / 1

_____

2) _____ ___ / 1

_____

3) _____ ___ / 2

_____

4) _____ ___ / 1

_____

5) _____ ___ / 1

_____

6) _____ ___ / 1

_____

7) _____ ___ / 2

_____

8) _____ ___ / 2

_____

9) _____ ___ / 3

_____

10) _____ ___ / 3

_____

11) _____ ___ / 3

_____

12) _____ ___ / 3

_____

13) _____ ___ / 2

_____

14) _____ ___ / 2

_____

15) _____ ___ / 3

_____

Total points: _____ / 30