2) **[300 Points]** Solve this Xenocrypt which is a quote by Albert Einstein in Spanish.

```
MDJ FK FNFACKR IR FV KD CJQIUQCDK ADIFJD MF QIZKYQJ

VRWJF KRV MFADV; FV KD YIQUD ADIFJD.
```

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

Here's one approach to solving it. Note that it is helpful to understand the most common words in Spanish. Wikipedia has a nice one at https://en.wikipedia.org/wiki/Most_common_words_in_Spanish with 100 words that are worth studying and recognizing.

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1. Looking at the frequency, we see that both **D** and **F** are high frequency letters, so we will assume that they are **E** and **A** which are the most frequently used letters in Spanish. However, given that they are both the same, we must look at the usage. Looking at the two-letter words using them we see **FV KD**. Since there are almost no two letter words that start with **A**, we can make a good guess that the **F** must be an **E** leaving **D** to stand for **A**.

```
MDJ FK  FNFACKR IR FV KD CJQIUQCDK ADIFJD MF QIZKYQJ
 A   E   E  E          E    A             A    A E A   E
VRWJF KRV MFADV; FV KD YIQUD ADIFJD.
   E       E A   E   A    A    A E A
```

	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	4		3	10		10			6	6	7		3	1				5	4			2	5	1		2	1
Replacement				A		E																					

2. Taking another look at the **KD** the most obvious two-letter Spanish word is **LA**, (the most common Spanish word), so we will guess that **K** stands for **L**.

```
MDJ  FK  FNFACKR  IR  FV  KD  CJQIUQCDK  ADIFJD  MF  QIZKYQJ
 A   EL  E  E   L        E   LA               AL   A E A   E       L
VRWJF  KRV  MFADV;  FV  KD  YIQUD  ADIFJD.
  E  L      E  A      E   LA         A    A E A
```

	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	4		3	10		10			6	6	7		3	1				5	4			2	5	1		2	1
Replacement				A		E					L																

3. The next two-letter word that is interesting is **FV**. The most common two-letter Spanish words are **ES**, **EL** and **EN**, but since we already have **K** standing for **L**. We must choose between **ES** and **EN**. Looking at the use of it right after the semi-colon, we can to guess that it is **ES** since few sentences would start with **EN**. We will assume that **V** stands for **S**. Additional confirmation comes from looking at the **KRV** which would be **L?S** and has to be **LOS** (since **E** and **A** are already known). This gives us that **R** stands for **O**.

```
MDJ  FK  FNFACKR  IR  FV  KD  CJQIUQCDK  ADIFJD  MF  QIZKYQJ
 A   EL  E  E   LO    O ES  LA              AL   A E A   E       L
VRWJF  KRV  MFADV;  FV  KD  YIQUD  ADIFJD.
SO   E  LOS    E  AS      ES  LA       A    A E A
```

	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	4		3	10		10			6	6	7		3	1				5	4			2	5	1		2	1
Replacement				A		E					L								O				S				

4. Our remaining high frequency letters are **I J** and **Q**. Given that the eight most common Spanish letters are **EAOSNRIL** and we have used five of them, we can check to see if **N R** and **I** make sense for filling in for any of them. Looking at the **IR** as **?O**, we can only see **NO** as the two letter word with **I** standing for **N**. Looking at the first word **MDJ** as **?A?**, there are no common words that end as **?AI** so we can guess that **J** stands for **R**.

```
MDJ  FK  FNFACKR  IR  FV  KD  CJQIUQCDK  ADIFJD  MF  QIZKYQJ
 AR  EL  E  E   LO   NO ES  LA    R N     AL   ANERA    E   N L    R
VRWJF  KRV  MFADV;  FV  KD  YIQUD  ADIFJD.
SO RE  LOS     E  AS      ES  LA    N   A    ANERA
```

	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	4		3	10		10			6	6	7		3	1				5	4			2	5	1		2	1
Replacement				A		E			N	R	L								O				S				

5. Another two letter word stands out – **MF** as **?E**. Another very common Spanish word is **DE** and since **D** has not been mapped, we will assume that **M** maps to **D**. This works out well as it makes the first word be **DAR**. Filling this in gives us:

MDJ FK FNFACKR IR FV KD CJQIUQCDK ADIFJD MF QIZKYQJ
DAR EL E E LO NO ES LA R N AL ANERA DE N L R
VRWJF KRV MFADV; FV KD YIQUD ADIFJD.
SO RE LOS DE AS ES LA N A ANERA

	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	4		3	10		10			6	6	7		3	1			5	4		2	5	1		2	1		
Replacement			A		E				N	R	L		D				O			S							

6. Coming back to the **Q** which we didn't map and remembering that we wanted to try **I**, we look at usage and it fits nice with the last word on the first line so we put it in to give us:

MDJ FK FNFACKR IR FV KD CJQIUQCDK ADIFJD MF QIZKYQJ
DAR EL E E LO NO ES LA RIN I AL ANERA DE IN L IR
VRWJF KRV MFADV; FV KD YIQUD ADIFJD.
SO RE LOS DE AS ES LA NI A ANERA

	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	4		3	10		10			6	6	7		3	1			5	4		2	5	1		2	1		
Replacement			A		E				N	R	L		D				I	O			S						

7. Looking at the **?NI?A** and the remaining letters, the only one which makes sense to be in front of the **N** is **U** so we will map **Y** to **U**:

MDJ FK FNFACKR IR FV KD CJQIUQCDK ADIFJD MF QIZKYQJ
DAR EL E E LO NO ES LA RIN I AL ANERA DE IN LUIR
VRWJF KRV MFADV; FV KD YIQUD ADIFJD.
SO RE LOS DE AS ES LA UNI A ANERA

	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	4		3	10		10			6	6	7		3	1			5	4		2	5	1		2	1		
Replacement			A		E				N	R	L		D				I	O			S					U	

8. Looking at the **?ANERA** we look for letters which remain and could make sense as a word. We haven't used **TCMPBHQYVGFJZÑXKW**. Going through the letters one at a time we have **TANERA**, **CANERA**, **MANERA**, **PANERA**, etc. But the only one which makes sense is **MANERA**, so we map A to **M** to give us:

```
MDJ FK FNFACKR IR FV KD CJQIUQCDK ADIFJD MF QIZKYQJ
DAR EL E EM LO NO ES LA  RIN I AL MANERA DE IN LUIR
VRWJF KRV MFADV; FV KD YIQUD ADIFJD.
SO RE LOS DEMAS  ES LA UNI A MANERA
```

	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	4		3	10		10			6	6	7		3	1				5	4			2	5	1		2	1
Replacement	M			A		E			N	R	L		D						I	O			S			U	

9. At this point, we have 8 letters that haven't been filled in. Since this is a 300 point question, you can get 7 letters wrong and still get 50 points, so every letter from here on out is worth 50 points. Looking at **CJQIUQCDK** as **?RIN?I?AL** we see that the **C** is used twice in that word. With our unused letter list now at **TCPBHQYVGFJZÑXKW**, we quickly try them as **TRIN?ITAL**, **CRIN?ICAL**, **PRIN?IPAL** etc and stop as we see that it looks suspiciously like **PRINCIPAL** and that it looks good paired in **PRINCIPAL MANERA** so we assume **C** maps to **P** and **U** maps to **C** which gives us 5 more letters solved:

```
MDJ FK FNFACKR IR FV KD CJQIUQCDK ADIFJD MF QIZKYQJ
DAR EL E EMPLO NO ES LA PRINCIPAL MANERA DE IN LUIR
VRWJF KRV MFADV; FV KD YIQUD ADIFJD.
SO RE LOS DEMAS  ES LA UNICA MANERA
```

	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	4		3	10		10			6	6	7		3	1				5	4			2	5	1		2	1
Replacement	M		P	A		E			N	R	L		D						I	O			C	S			U	

10. With only 3 letters unmatched, on this 300 point question, we would score 250 points, so we could stop. However, there is no penalty for guessing and any one of the tree being right would get us 50 more points. Our remaining unused letters are **TBHQYVGFJZÑXKW**, Running letters through the three remaining words, possible guess are **EJEMPLO** and **EXEMPLO**. Since **J** is more common than **X** we will guess **N** maps to **J**. The only letter that makes sense for **IN?LUIR** is **F** (**C** was already taken, otherwise we would guess **INCLUIR**) so **Z** must map to **F**. Lastly **SO?RE** is the very common Spanish word **SOBRE** so we map **W** to **B** with a solution of:

```
MDJ  FK  FNFACKR  IR  FV  KD  CJQIUQCDK  ADIFJD  MF  QIZKYQJ
```
<mark>*DAR EL EJEMPLO NO ES LA PRINCIPAL MANERA DE INFLUIR*</mark>
```
VRWJF  KRV  MFADV;  FV  KD  YIQUD  ADIFJD.
```
<mark>*SOBRE LOS DEMAS   ES LA UNICA MANERA*</mark>

	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	4		3	10		10			6	6	7		3	1				5	4			2	5	1		2	1
Replacement	M		P	A		E			N	R	L		D	J				I	O			C	S	B		U	F

<mark>Dar el ejemplo no es la principal manera de influir sobre los
demás; es la única manera.</mark>

Translation: *Setting the example is not the main way to influence others; it's the only way*