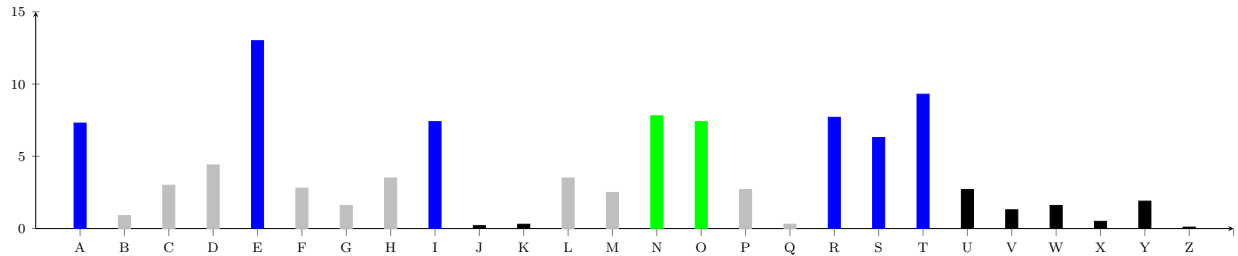


# 1 Useful Information

Indices of letters:

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
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



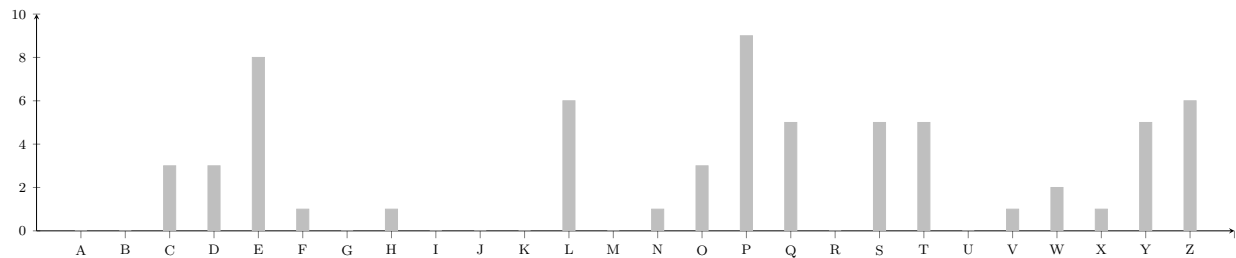
## 2 Tasks

### Find the difference in keys

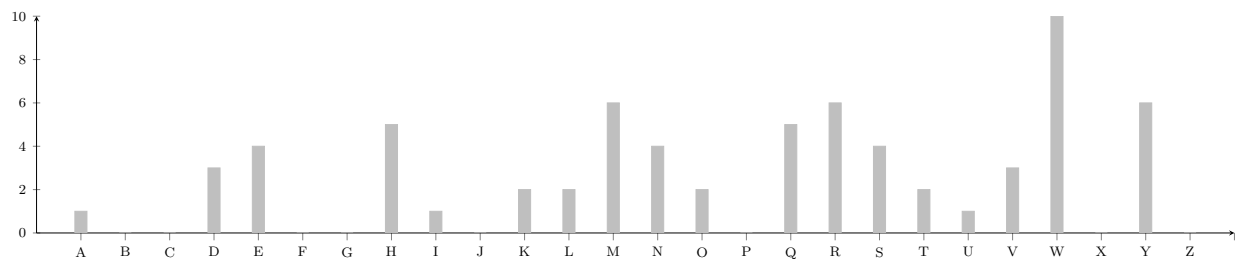
Given two ciphertexts  $Y : M BQDEAZ ITA ZQHGD YMPQ M YUEFMWQ ZQHGD FDUQP MZKFTUZZS ZQI$  and  $Y' : GZVMI AMJH TZNOZMYVT GDQZ AJM OJYVT CJKZ AJM OJHJMMJR$ , which are two different messages encrypted by shift cipher using different keys  $z$  and  $z'$ . Find  $z - z' \pmod{26}$ .

### Decipher the messages

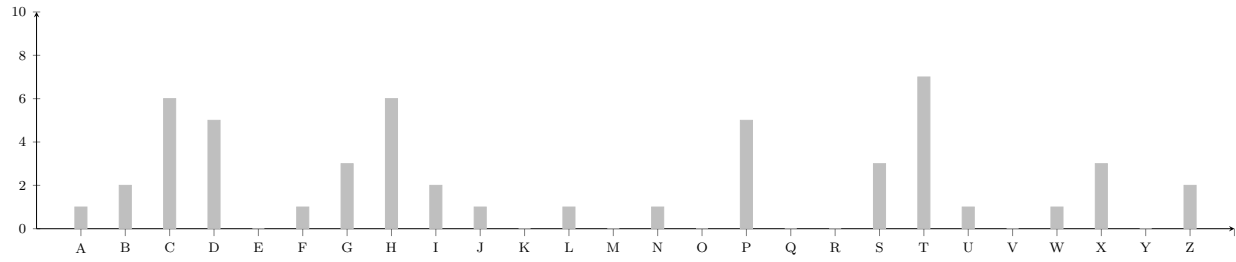
1. ESPCP TD L ETOP TY ESP LQQLTCD ZQ XPY HSTNS ELVPY LE ESP QWZZO WPLOD ZY EZ QZCEFYP



2. SV SQ VNY OWMWR KWRTYL WD EHH MYR NWK EMWRI QW MERU MSHHSWRQ WD DEOYQ VNYLY QNWAHT



3. BDSTGC WXHIDGN AXZT P STPU BPC PCHLTGH FJTHIXDCH CD DCT PHZTS



4. JDI HVANGNKFKJS JDGJ EI MGS PGKF KT G EAVJDS UGQCI KC TAJ CQPPKUKITJ RQCJKPKUGJKAT  
PAV A QV VIPQCKTW JA CQHHAVJ KJ

