after checking your answers, I found that no one could solve the mod equation...
Actually, some of you couldn't even write the equations correctly.
The question was:
For chipher text, it's found that: b is the most frequent letter & u is the second most frequent one.
For plain text: e is the most frequent letter & t is the second most frequent one.
--Note: this directly means that e was replaced by b & t is replaced by u
the equation used to generate the cipher is:
C=(a*p+b) mod 26
C: cipher charachter
P: plain charachter
& you were asked to get a & b..
the codes assigned to the charachters are: b ->1, e-> 4, t->19 & u->20
by substituting in the equation we get:
b=(a*e+b) mod 26 which means:
1=(a*4+b) mod 26 (1)
&
u=(a*t+b) mod 26 which means
20=(a*19+b) mod 26 (2)
Subtract (1) from (2):
19= 15*a mod 26 (3)
so, a= 3
substitute in (2):
20= (19*3 + b) mod26
20= 5 +b mod 26
(19*3 = 5, how??? the equation is mod26, so 19*3 =57 mod 26 gives 5)
15= b mod26
simply b=15