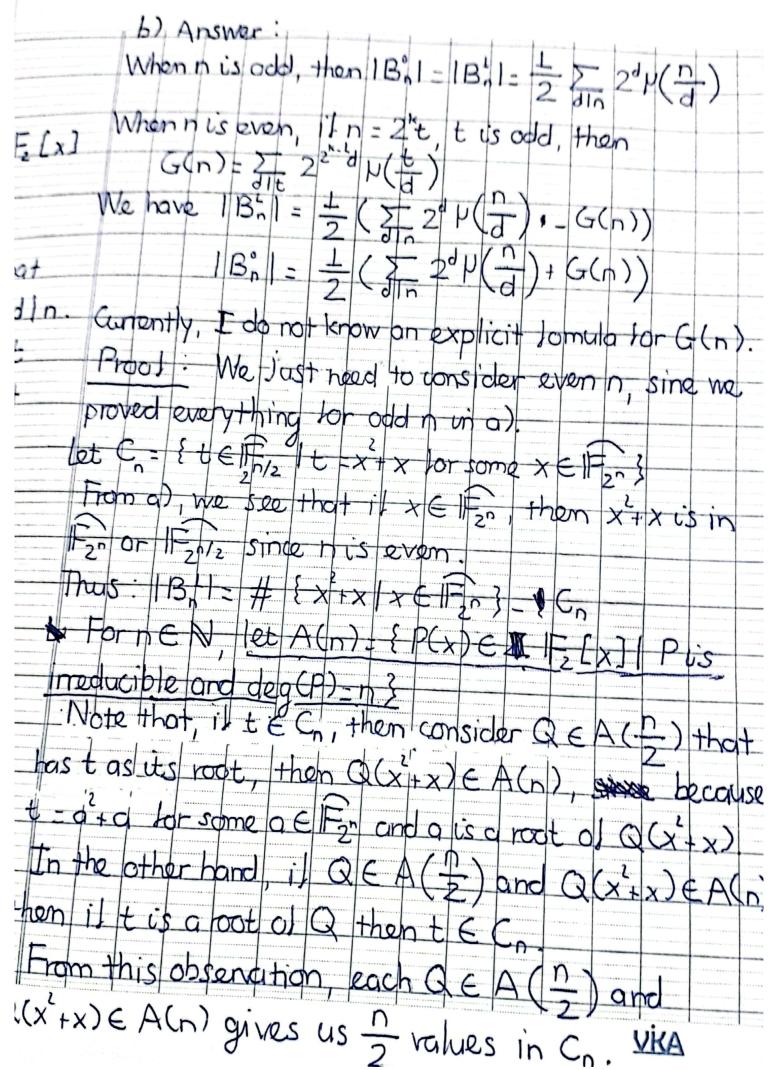
8 a). The answer is L Proof: First we will prove the following lemma: Lemma: Il nis odd and a ElFzn, then a + a E F Proof: Since a elfz, there is a polynomial P(x) & IF, [x]
degreen such that P is irreducible and has a as its root. This come from the fact that x2" x is the product of all irreducible polynomials in IFz [x] such that their degree divides no let to a then telfzo withdin. let Q(x) EIF_[x] such that Q is irreducible and has t as its root. Then deg(Q) d. It is easy to see that is a root of Q(x'+x). This means P(x)/Q(x'+x) towever deg(P)=n and deg(Q(x'x))=2d, this means d=n since d/n. Thus we proved the lemma. Now , we compute // = 1. We see that: hus $||E_2|| = \sum_{n=1}^{\infty} 2^n \mu(\frac{n}{d})$, where V is the mobius hunction. by the lemma above, we have: 1B 1= # { X + X | X E F 20 2 see that x + x = y + y => X+XIXEIEN L= IIII 45 /13 1/1B =



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