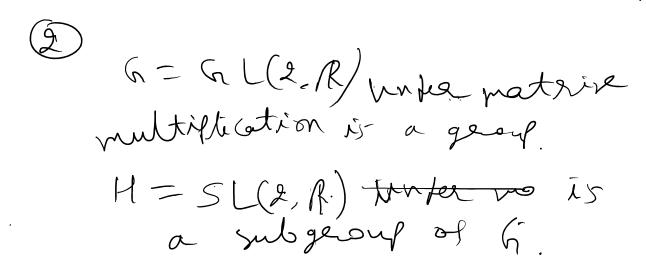
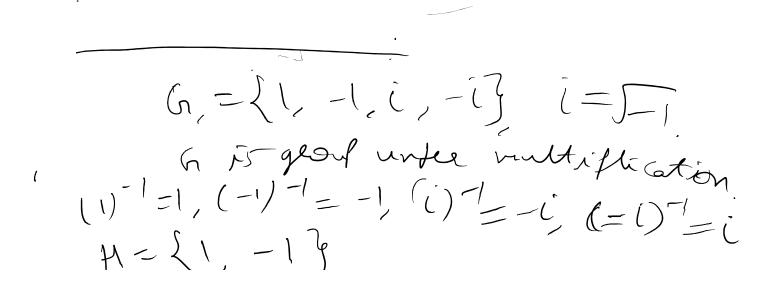
Sub group:

- A Subset Mot G is collect subgroup of G if M is itself a group under the operation of G.
- Frank: f = (R, +) x a grap H = (Q, +) x a grap F.





Ubsed, Associative, Identify Inverse H is a subgeoup of G On the of a geor The no. if elements of a geor is when its order. Notation: [6] al O(G) V(10) = <1,3,7,93 |V(10)| = 4. Order it an element: The orter of an element g E G is the snallest positive integer on such that  $T_{1}^{(a)}$  addition,  $g^{(a)} = g + g + - - + g$  $== \gamma q$ It no such integer exist, we say that

Offer it 2 is infinite.  
Notation: 
$$O(g) or |2|$$
.  
 $U(12) = \{1, 5, 7, 11\}$ , under multiplication  
 $111 = 1$ ,  $|5| = 2$ .  
 $5' = 5(mod 12) = 5$   
 $5^2 = 25(mod 12) = 1 = 2$ .  
 $1 = 2$ .  
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(2)  $G = \sum_{i=1}^{n} -1, i, -i$  multiplication  $i = 1, -1 = 2, \quad i = 4, -i = 4$   $i = 1, -1 = 2, \quad i = 4, -i = 4$ (24, 44) is a grap  $24 = \{0, 1, 2, 3\}$  Identity = 0.  $[0] = 1, \quad [44] + 4 = 4(morg) = 0$   $[1] = 4, \quad 242 = 4(mod 4) = 0$  $[2] = 2, \quad 343 = 2, \quad 343 = 1$ 

 $3 + q^{3} + q^{3} + q^{3} = (2 (mof q))$ - = 0.

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