

#flo #disorganized #inclass

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## 1 | chapter :clap: review

clap

KBxGroupAndMatricesIntro

field: group with + and \*  
 eg. complex #, real #  
 F: field -- usually real and/or complex

don't need to worry about distributivity!  
 we are gonna use a lotta fields and not a lot of groups  
 figure it out in low d then just apply to high d  
 addition -> commutative in f1, extrapolate to fn

inherited commutativity!

3d vis on 2d means losing info, thus point has a line of points that all fall there  
 additive and multiplicative identity need to be separate!  
 any group with zero will not be groups under \*!  $Q^* = (Q \setminus \{0\}, *)$  pluck out zero

### 1.0.1 | associativity check, with integers!

let  $a, b, c \in \mathbb{Z}$   
 goal:  $a + (b + c) = (a + b) + c$   
 $a + (b + c) = (1 + 1 + 1 + 1 + \dots + 1) = (1 + 1 + 1 + 1 + \dots + 1) + (1 + 1 + 1 + 1 + \dots + 1) + (1 + 1 + 1 + 1 + \dots + 1)$   
 and then scoot over?  
 #review

### 1.0.2 | \* 3x1 matrices

- equal indices

no \* everything by 1 cuz  $a_i \neq i_a$  :(  
 dot and cross product