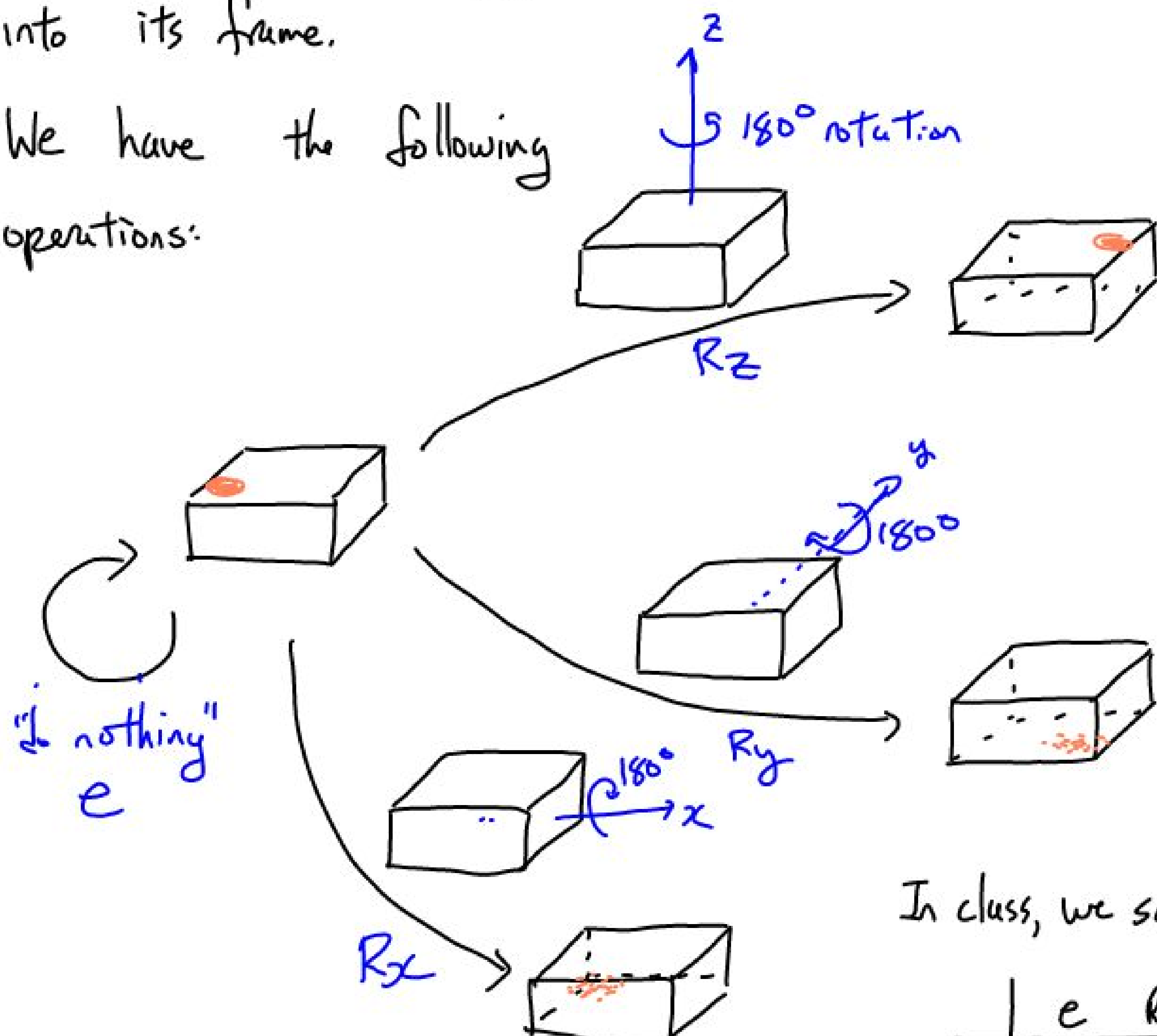
The Mattress Group:

Let M be a mattress. ("mattress" has not been rigorously defined in this class.) The <u>mattress group</u> is the group of symmetries of M — ie, the collection of things we can do to M while M still fits snugly into its frame.

We have the following operations:



In class, we saw:

	e	R_x	R_y	R_z
e	e	R_x	R_y	R_z
R_x	R_x	e	R_z	R_y
R_y	R_y	R_z	e	R_x
R_z	R_z	R_y	R_x	e

Some principles I stated:
(You can prove these if you want; they're not bad!)

- In a group's multiplication table, each row/column contains each element of G exactly once. (use cancellation law).

- If a mult. table is symmetric about diagonal, G is abelian.

	h	$\cdots$	g
h	h^2		hg
$\vdots$			
g	gh		g^2

$\Longleftrightarrow gh = hg$.

diagonal

<u>Example</u>: Mattress group is abelian.