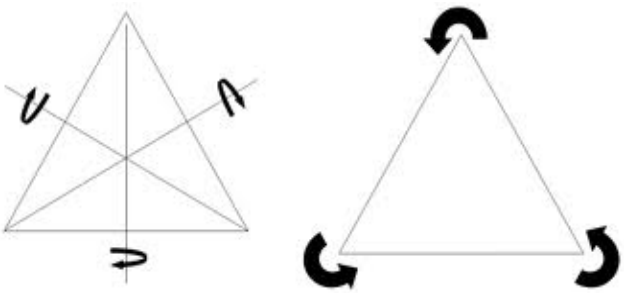
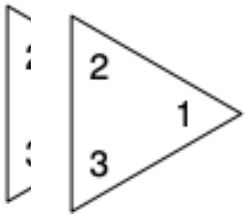
Group Theory Day 2

From Snaps to Flips



The Flip group

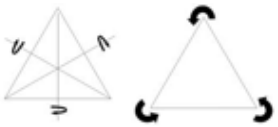


Rigidity

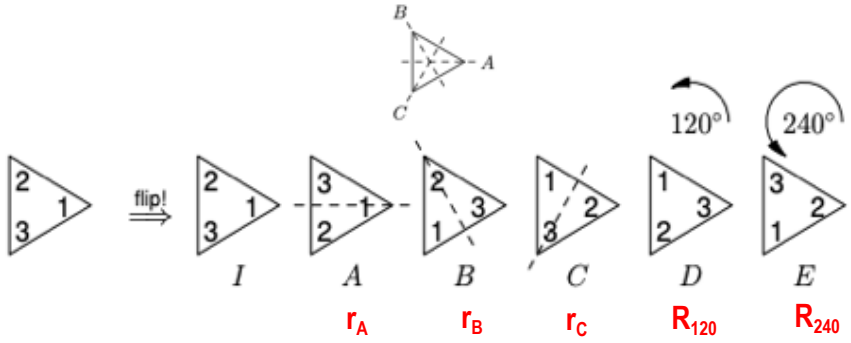
The triangular footprint is fixed in place.

How many different triangles are there?

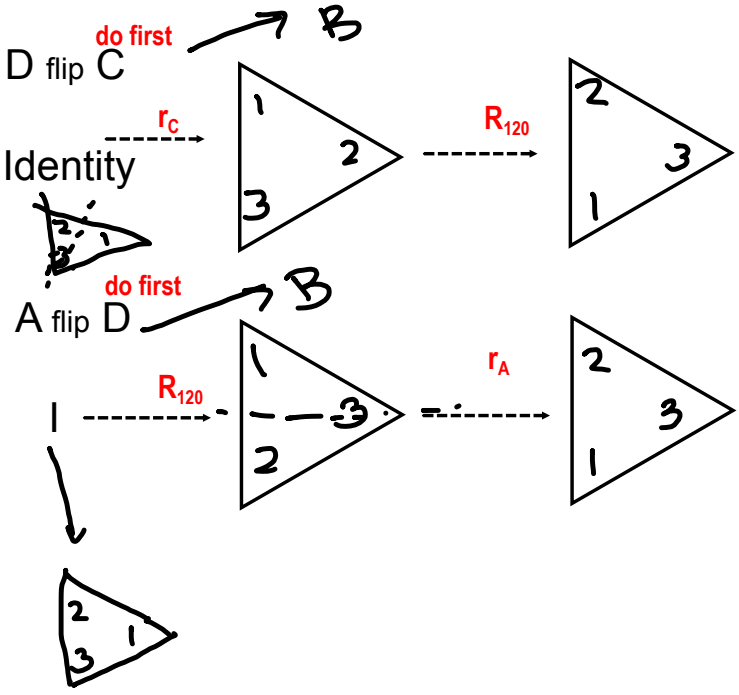
This group is sometimes called a "rotation, reflection group" (for obvious reasons)



The elements and the operations



note the concept of an element and an operation are "blurred"



Make and fill in a table

A flip D = B

D flip C = B

·	I	A	B	C	D	E
I						
A					B	
B						
C						
D						
E						

https://nichodon.github.io/gatm/textbook/chapters/snap_flip.pdf

Go to your breakout groups and work on Chap 3 From Snaps to Flips. Note all the new vocabulary, bolded in the text.

Regroup on next day. 30 min too short!

·	I	A	B	C	D	E
I	I	A	B	C	D	E
A	A	I	D	E	B	C
B	B	E	I	D	C	A
C	C	D	E	I	A	B
D	D	C	A	B	E	I
E	E	B	C	A	I	D

Agree or disagree:

The **snap group** and the **flip group** are the "same". Why does your answer make sense? What's the connection between posts and triangles?

Could we have changed names to make the charts exact?

Yup. If you switched D and E on the flips, and rearranged the rows and columns, you'd have the snaps. *Or, do the transpose, which changes the order convention.*

Mr. Herreshoff provides a definition for **isomorphic** in the book. Take a moment to reread it.

What were some of your translations?

My attempt: Two groups are isomorphic if their charts could be made identical simply by changing the names of two or more elements.

Or: Every element in one, has a partner in the other that plays the same "role".