

Some multiplication tables

The main point of these notes is for me to remember how to typeset something that looks like a multiplication table.

+	0	1	2
0	0	1	2
1	1	2	0
2	2	0	1

Addition in $\mathbb{Z}/3\mathbb{Z}$

·	0	1	2
0	0	0	0
1	0	1	2
2	0	2	1

Multiplication in $\mathbb{Z}/3\mathbb{Z}$

To try a harder one, here's the multiplication table for symmetries of an equilateral triangle with vertices (labelled in counterclockwise order) A , B , and C . There were six symmetries: rotations rot_θ by angles of 0, 120, and 240 degrees, and reflections $refl_A$ (fixing the vertex A), $refl_B$, and $refl_C$. Here's a multiplication table. (It may not be identical to the one I made in class.) The operation in the top row is performed first, and the one in the left column is performed second; the corresponding entry in the table tells you the result.

·	<i>id</i>	<i>rot</i> ₁₂₀	<i>rot</i> ₂₄₀	<i>refl</i> _A	<i>refl</i> _B	<i>refl</i> _C
<i>id</i>	<i>id</i>	<i>rot</i> ₁₂₀	<i>rot</i> ₂₄₀	<i>refl</i> _A	<i>refl</i> _B	<i>refl</i> _C
<i>rot</i> ₁₂₀	<i>rot</i> ₁₂₀	<i>rot</i> ₂₄₀	<i>id</i>	<i>refl</i> _C	<i>refl</i> _A	<i>refl</i> _B
<i>rot</i> ₂₄₀	<i>rot</i> ₂₄₀	<i>id</i>	<i>rot</i> ₁₂₀	<i>refl</i> _B	<i>refl</i> _C	<i>refl</i> _A
<i>refl</i> _A	<i>refl</i> _A	<i>refl</i> _C	<i>refl</i> _B	<i>id</i>	<i>rot</i> ₂₄₀	<i>rot</i> ₁₂₀
<i>refl</i> _B	<i>refl</i> _B	<i>refl</i> _A	<i>refl</i> _C	<i>rot</i> ₁₂₀	<i>id</i>	<i>rot</i> ₂₄₀
<i>refl</i> _C	<i>refl</i> _C	<i>refl</i> _B	<i>refl</i> _A	<i>rot</i> ₂₄₀	<i>rot</i> ₁₂₀	<i>id</i>

Multiplication of symmetries of a triangle

·	0	1	2	3	4	5	6
0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6
2	0	2	4	6	1	3	5
3	0	3	6	2	5	1	4
4	0	4	1	5	2	6	3
5	0	5	3	1	6	4	2
6	0	6	5	4	3	2	1

Multiplication in $\mathbb{Z}/7\mathbb{Z}$