

Assignments, February 4

Here are the Cayley tables from class:

$$\mathbb{Z}/6\mathbb{Z}$$

+	0	1	2	3	4	5
0	0	1	2	3	4	5
1	1	2	3	4	5	0
2	2	3	4	5	0	1
3	3	4	5	0	1	2
4	4	5	0	1	2	3
5	5	0	1	2	3	4

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

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

$$\mathbb{Z}/2\mathbb{Z}$$

+	0	1
0	0	1
1	1	0

$$D_6$$

o	1	r	r^2	s	sr	sr^2
1	1	r	r^2	s	sr	sr^2
r	r	r^2	1	sr^2	s	sr
r^2	r^2	1	r	sr	sr^2	s
s	s	sr	sr^2	1	r	r^2
sr	sr	sr^2	s	r^2	1	r
sr^2	sr^2	s	sr	r	r^2	1

$$\mathbb{Z}/3\mathbb{Z} \times \mathbb{Z}/2\mathbb{Z}$$

(+, +)	(0,0)	(0,1)	(1,0)	(1,1)	(2,0)	(2,1)
(0,0)	(0,0)	(0,1)	(1,0)	(1,1)	(2,0)	(2,1)
(0,1)	(0,1)	(0,0)	(1,1)	(1,0)	(2,1)	(2,0)
(1,0)	(1,0)	(1,1)	(2,0)	(2,1)	(0,0)	(0,1)
(1,1)	(1,1)	(1,0)	(2,1)	(2,0)	(0,1)	(0,0)
(2,0)	(2,0)	(2,1)	(0,0)	(0,1)	(1,0)	(1,1)
(2,1)	(2,1)	(2,0)	(0,1)	(0,0)	(1,1)	(1,0)

12. (1 pt) Find an explicit isomorphism between $\mathbb{Z}/6\mathbb{Z}$ and $\mathbb{Z}/3\mathbb{Z} \times \mathbb{Z}/2\mathbb{Z}$.