

Have shown: $n \geq 3$. Then $M_n[\frac{1}{6}] / \mathbb{Z}[\frac{1}{6n}]$ representable

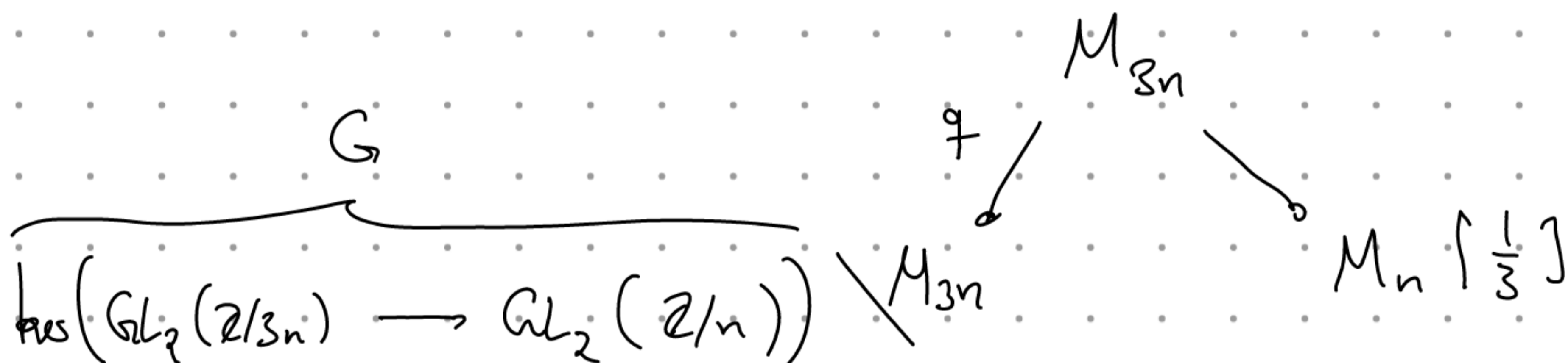
Would like to show: $M_n / \mathbb{Z}[\frac{1}{n}]$ representable.

We will follow Igusa Construction:

① Show by hand that $M_3 / \mathbb{Z}[\frac{1}{3}]$, $M_4 / \mathbb{Z}[\frac{1}{2}]$ are representable. (We only do M_3 .)

This requires us to also speak about the Weil pairing $E[n] \times E^\vee[n] \rightarrow \mu_n$.

② Given $n \geq 3$, we then consider diagram



and prove that the quotient $\backslash M_{3n}$ & $M_n[\frac{1}{3}]$ are

isomorphic. Similarly for $M_{4n} \rightarrow M_n[\frac{1}{2}]$.

Then $M_n[\frac{1}{2}]$ & $M_n[\frac{1}{3}]$ glue to M_n .

In principle, ② is same as our quotient construction from \tilde{M}_n . However, the G -torsor η is only trivial étale locally. Thus we will develop some descent statements for ECs.