

and

$$\begin{aligned} j^*H &= B_L \cup B_{\mathcal{L}(L)} \\ &= (B_{L_0} - L) \cup (B_{L_0} + L + \mu) \\ &= 2B_{L_0} + \frac{1}{2}\mu, \end{aligned}$$

for some $\mu \in A$, i.e., the line bundles j^*H and j'^*H differ by translation.

$$\begin{aligned} \sqcap \quad j^*h &= j^*H = B_L \cup B_{\mathcal{L}(L)} = (B_{L_0} - L) \cup (B_{-L}) \\ &= (B_{L_0} - L) \cup (B_{L_0} + L), \text{ since } \mathcal{L}(L) = -L. \end{aligned}$$

$$\sim B_{L_0} + B_{L_0} = 2B_{L_0} \text{ as divisors.}$$

$$\begin{aligned} j'^*H &= j'^*h = B_{L'} \cup B_{\mathcal{L}(L')} = (B_{L_0} - L') \cup (B_{-L' - \mu})^* \\ &= (B_{L_0} - L') \cup (B_{L_0} + L' + \mu) \end{aligned}$$

$$= B_{L_0} \cup (B_{L_0} + \mu) = 2B_{L_0} + \frac{1}{2}\mu, \text{ for, according to P316.}$$

$$\begin{aligned} l \otimes \tau_\mu^* l &\text{ has multipliers } e_{\lambda\alpha} = 1, \quad e_{\lambda n + \alpha} = e^{-2\pi i(2z_\alpha + \mu_\alpha)} \\ \text{where } l &\text{ has multipliers } e_{\lambda\alpha} = 1, \quad e_{\lambda n + \alpha} = e^{-2\pi i z_\alpha} \\ \text{and } \tau_\mu^* l &\text{ " " " } e_{\lambda n + \alpha} = e^{-2\pi i(z_\alpha + \mu_\alpha)}. \end{aligned}$$

$$\begin{aligned} \Rightarrow \tau_{\frac{1}{2}\mu}^*(l \otimes l) &= \tau_{\frac{1}{2}\mu}^* l \otimes \tau_{\frac{1}{2}\mu}^* l \text{ has multipliers} \\ e_{\lambda\alpha} &= 1 \quad e_{\lambda\alpha + n} = e^{-2\pi i(z_\alpha + \frac{1}{2}\mu_\alpha)} \cdot e^{-2\pi i(z_\alpha + \frac{1}{2}\mu_\alpha)} \\ &= e^{-2\pi i(2z_\alpha + \mu_\alpha)} \end{aligned}$$

$$\Rightarrow l \otimes \tau_\mu^* l = \tau_{\frac{1}{2}\mu}^*(l \otimes l).$$

(*) See P947 note and P780. $\mathcal{L}(L') = -L' - \mu$ since $X_p \neq X_n$ in general, and \mathcal{L} & \mathcal{L}' have different base points. Note that, on P783, we already assume $L_0 = 0$ and $\mathcal{L}'(L_0) = L_0$.