$\frac{1}{5}(1,1)$

$N = \mathbb{Z}e_1 \oplus \mathbb{Z}e_2 \qquad \sigma = \mathbb{R}_{\geq 0}e_1 + \mathbb{R}_{\geq 0}e_2$

$N = \mathbb{Z}f_1 \oplus \mathbb{Z}f_2 \qquad f_1 = e_1, \quad f_2 = \frac{e_2 - e_1}{5}$

$\sigma = \mathbb{R}_{\geq 0}f_1 + \mathbb{R}_{\geq 0}(f_1 + 5f_2)$

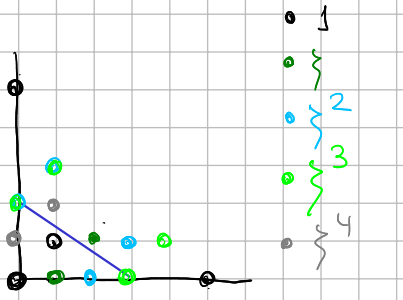
$e_1 = f_1 \qquad e_2 = f_1 + 5f_2$

$M_1 = \mathbb{Z}e_1^* \oplus \mathbb{Z}e_2^* \qquad \langle e_i, e_j^* \rangle = \delta_{ij}$

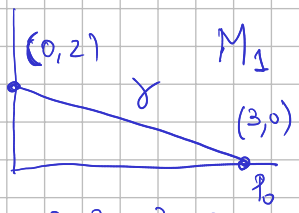
$M = \mathbb{Z}f_1^* \oplus \mathbb{Z}f_2^* \qquad \langle f_i^*, f_j^* \rangle = \delta_{ij}$

$f_1^* = e_1^* + e_2^*$

$f_2^* = 5e_2^*$



$F(x,y) = y^2 - x^3$ P_1



e_1, e_2

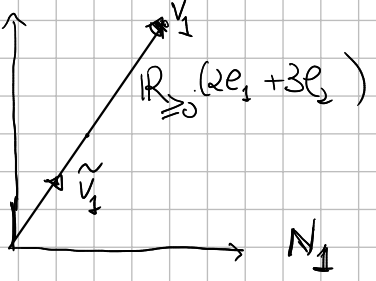
$F(\xi_5 x, \xi_5 y) = \xi_5^2 y^2 - \xi_5^3 x^3 = \xi_5^3 (y^2 - x^3)$

$M_0 = \{ xe_1^* + ye_2^* \;/\; x \equiv y \ (5) \}$

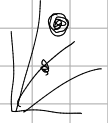
$V_1 = 2e_1 + 3e_2 = 2f_1 + 3(f_1 + 5f_2) =$

$= 5f_1 + 15f_2 = 5(f_1 + 3f_2)$

$\tilde{V}_1$







$N_{P_0} = (3,0), \quad N_{P_1} = (0,2)$

$\underline{\nu} = (1,1) \rightsquigarrow \nu_{anal} = \langle (1,1), (2,3) \rangle = 5$ (anal; $\underline{\nu} \parallel V_1$)

$\langle N_{P_0}, V_1 \rangle = \langle N_{P_1}, V_1 \rangle$

$\underline{\nu} = f_1^* + f_2^* \qquad N_{P_0} = 3f_1^* \qquad N_{P_1} = 2f_2^*$

$V_1 = 2f_1 + 3f_2$

$\underline{n} \in N_1 \rightsquigarrow \varphi = (\varphi_1(t), \varphi_2(t))$

$\operatorname{ord}_t \varphi_i(t) = n_i \quad i = 1,2$

$N(\varphi) = \operatorname{ord}_t F \circ \varphi = \min_{\substack{m \in M_1 \\ n \in N_1}} \{ \langle m, n \rangle \;/\; m \text{ def.} \}$

$Z_{top}^{\mathbb{C}^2}(F, \omega) = X_{P_0} + X_{P_1} - X_\gamma$

$X_{P_0} = \text{mult. conv.} \cdot \frac{1}{\langle V_1, N_{P_0} \rangle S + \langle V_1, \underline{\nu} \rangle}$

$P_0 = (3,0)$

$2f_1 + 3f_2$

$\rightsquigarrow \det \begin{pmatrix} 2 & 0 \\ 3 & 1 \end{pmatrix} = 2$

$V_1 \quad f_2$

$X_{P_1} = \text{mult. conv.} \cdot \frac{1}{\langle N_{P_1} S + \underline{\nu}, V_1 \rangle \langle N_{P_1} S + \underline{\nu}, e_1 \rangle}$

$P_1 = (0,2)$

e_1

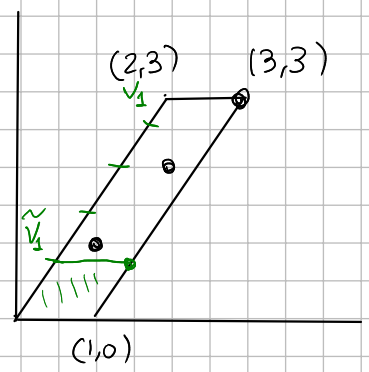
$2e_1 + 3e_2$

$\frac{1}{\langle N_{P_0} S + \underline{\nu}, V_1 \rangle \langle N_{P_0} S + \underline{\nu}, f_2 \rangle}$

$(6S+5) \qquad 1$

$\gamma \rightsquigarrow \operatorname{vol}(\gamma) = 1 \qquad S \qquad \frac{\text{mult(conv)}}{(S+1)\langle N_{P_0} S + \underline{\nu}, V_1 \rangle}$

1



$$\tilde{X}_{P_0} = \frac{\text{mult. conv}^{-2}}{\langle \ , \tilde{v}_1 \rangle \langle \ , \tilde{v}_1 \rangle} = \frac{2 \cdot 5}{\langle v_1 \rangle \langle \ , v_1 \rangle}$$

$v_1 \rightsquigarrow v_1/5 = \tilde{v}_1 = \beta_1 + 3\beta_2$

$\beta_2 \rightsquigarrow \beta_1 + 5\beta_2$

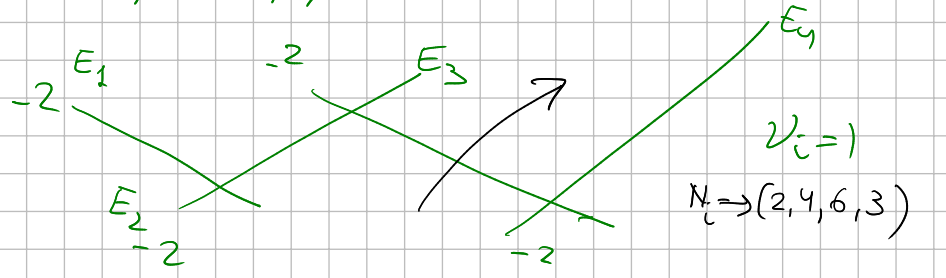
$$\tilde{X}_{P_0} = 5\, X_{P_0}$$

$$\tilde{X}_{P_1} = \frac{\text{mult conv}}{\langle \ , \tilde{v}_1 \rangle \langle \ , \tilde{v}_1 \rangle} = \frac{5}{\langle \ , v_1 \rangle \langle \ , v_1 \rangle} = 5\,\tilde{X}_{P_1}$$

β_1 $\tilde{v}_1 = v_1/5 = \beta_1 + 3\beta_2$

v_1 $e_1 \rightsquigarrow \beta_1$

$$\tilde{X}_\gamma = 5 X_\gamma$$



$v_i = 1$

$N_i \to (2,4,6,3)$

$$\frac{1}{1+2s} + \frac{1}{(1+2s)(1+4s)} + \frac{1}{(1+4s)(1+6s)} - \frac{1}{1+6s} + \frac{1}{(1+6s)(1+4s)} + \frac{1}{(1+6s)(1+3s)} - \frac{1}{1+3s}$$

$$\frac{2}{1+4s}$$

$s_1 = \frac{s}{5}$

$$\frac{4}{1+6s_1} + \frac{1}{(1+6s_1)(1+s_1)} = \frac{5+4s_1}{(1+6s_1)(1+s_1)}$$



$\sum_i E_i \cdot (K+E_i) = -2 \qquad K = \sum a_i E_i$

$-2 = E_1 \cdot (K+E_1) = E_1 \cdot \left((a_1+1)E_1 + a_2 E_2 + \dots \right) =$

$= -2(a_1+1) + a_2 \Rightarrow a_2 = -2(a_1+1) - 2a_1$

$-2 = E_2 \left(a_1 E_1 + (a_2+1)E_2 + a_3 E_3 + \dots \right) =$

$= +a_1 - 2(a_2+1) + a_3 \qquad a_1 + a_3 = 2a_2 \Rightarrow \boxed{a_3 = 3a_1}$

$a_3 = -2(a_4) - 2a_4$

$a_2 + a_4 = 2a_3 \qquad a_4 = 3a_2 = 6a_1$

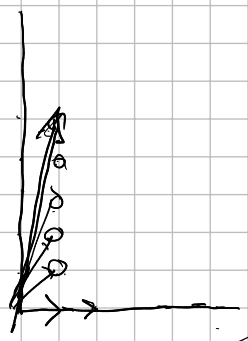
$a_2 = 2a_1$

$a_3 = 3a_1$

$a_4 = 6a_1 = 12a_1 \Rightarrow \boxed{a_1 = 0}$

$$\begin{pmatrix} -2 & 1 & & \\ 1 & -2 & 1 & \\ & 1 & -2 & 1 \\ & & 1 & -2 \end{pmatrix} \begin{pmatrix} a_1 \\ a_2 \\ a_3 \\ a_4 \end{pmatrix} = \begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}$$

$z^5 = xy$



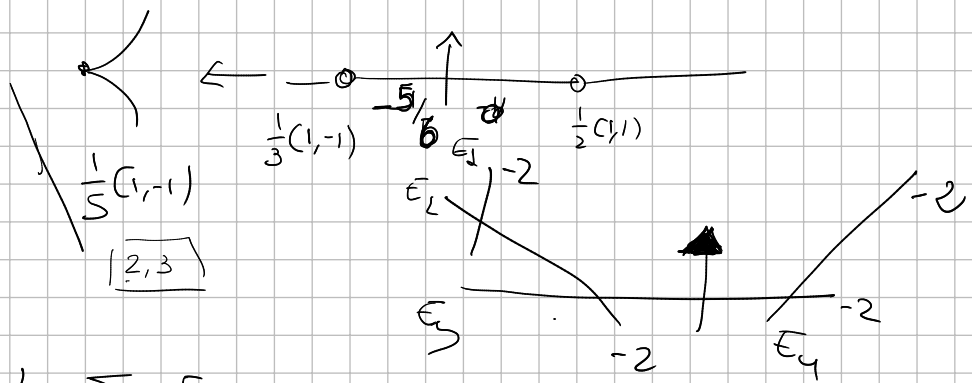
$y^2 = x^3$



$E_j \cdot (t + \sum n_i E_i) = 0$

$n_2 = 2n_1 \quad n_3 = 3n_1 = 3n_3$

$n_4 = 2n_3$



$t + \sum n_i E_i$

$n_2 = 2n_1 \qquad n_2 + 1 + n_4 = 2n_3 \qquad \left(\frac{2}{5}, \frac{4}{5}, \frac{6}{5}, \frac{3}{5}\right)$

$n_3 = 3n_1$

$n_4 = 4n_1 - 1$

$n_3 = 2n_4$ $\quad \Big| \quad 3n_1 = 8n_1 - 2 \Rightarrow n_1 = \frac{2}{5}$