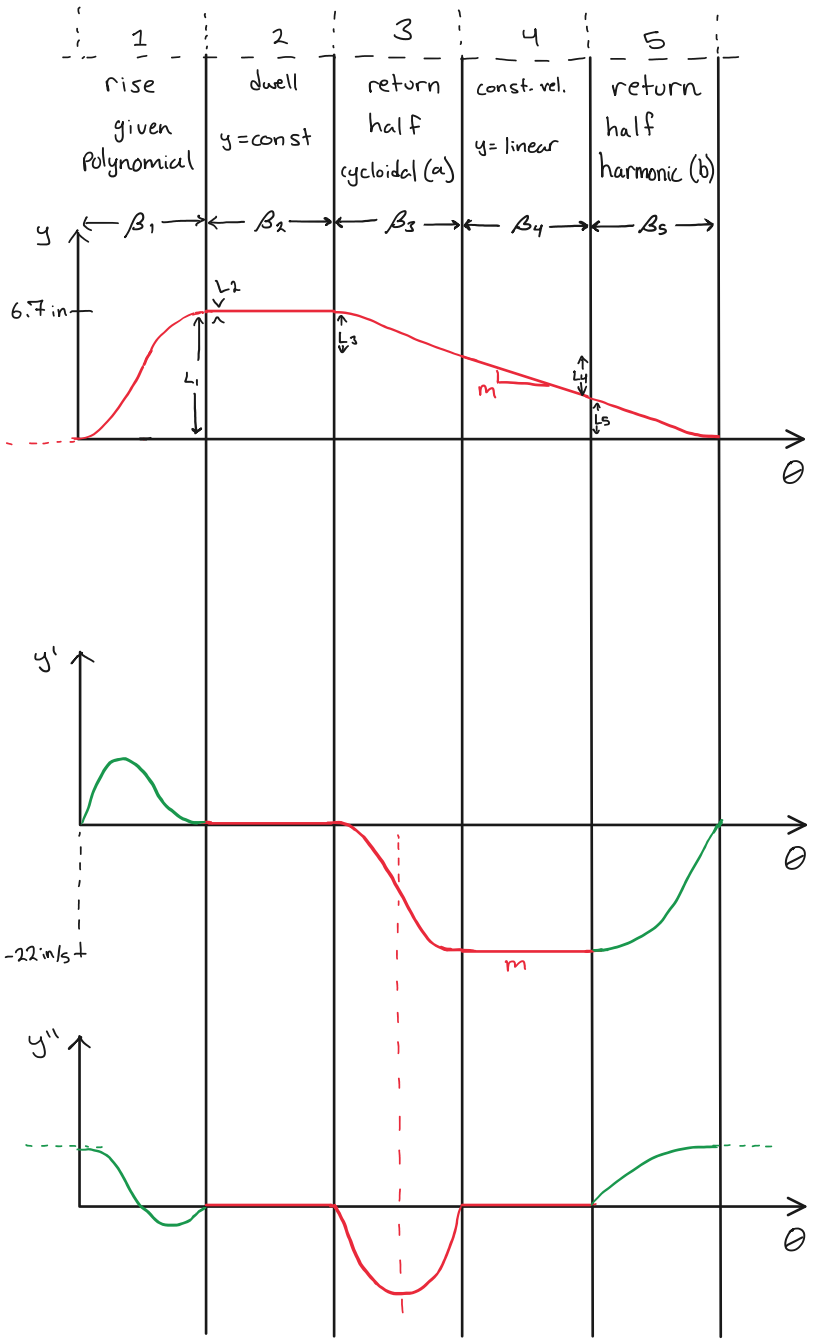

Given Polynomial = y_1

$y_1 = 6L\left(\frac{\theta}{\beta}\right)^2 - 8L\left(\frac{\theta}{\beta}\right)^3 + 3L\left(\frac{\theta}{\beta}\right)^4$

$y_1' = 12L\theta/\beta^2 - 24L\theta^2/\beta^3 + 12L\theta^3/\beta$

$y_1'' = 12L/\beta^2 - 48L\theta/\beta^3 + 36L\theta^2/\beta$

SECTION	EQUATION
1	Given Polynomial
2	Constant
3	Half-Return Cycloidal (a)
4	Linear
5	Half-Return Harmonic (b)

$L_1 = 6.7$ in	$\beta_1 = 2.677$ rad
$L_2 = 0$ in	$\beta_2 = 20° = 0.349$ rad
$L_3 = 4.43$ in	$\beta_3 = 2.446$ rad
$L_4 = 1.1$ in	$\beta_4 = 0.304$ rad
$L_5 = 1.17$ in	$\beta_5 = 0.507$ rad

$\omega = 58$ rpm $= 6.07$ rad/s

$\dot{y}_4 = -22$ in/s

$y_4' = \dot{y}_2/\omega = -4.116$ in/rad $= m$

$\beta_4 = L_4/y_4' = 0.2672$ rad

① $y_3'\left(\frac{\theta}{\beta}=1\right) = m$

② $y_5'\left(\frac{\theta}{\beta}=0\right) = m$

③ $y_5''\left(\frac{\theta}{\beta}=1\right) = y_1''\left(\frac{\theta}{\beta}=0\right)$

④ $L_3 + L_4 + L_5 = L_1$

⑤ $\beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 = 2\pi$ rad