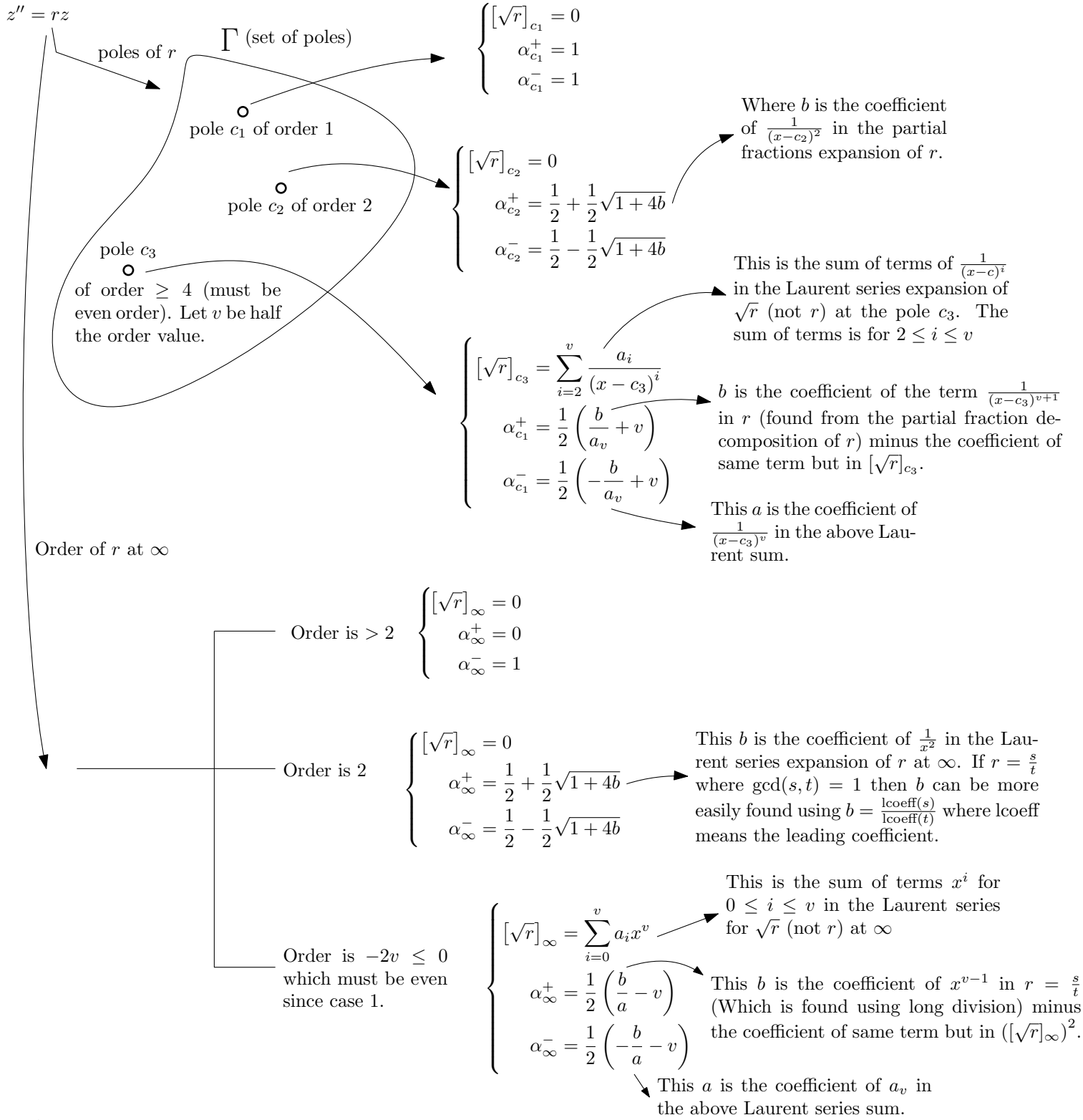


Case One Algorithm

Step 1



Step 2

For each family $s = (s(c))_{c \in \Gamma \cup \infty}$ where $s(c)$ is + or - let

$$d = \alpha_{\infty}^{s(\infty)} - \sum_{c \in \Gamma} \alpha_c^{s(c)}$$

If family found which produced d an integer and positive then find

$$\omega = \sum_{c \in \Gamma} \left(s(c) [\sqrt{r}]_c + \frac{\alpha_c^{s(c)}}{x - c} \right) + s(\infty) [\sqrt{r}]_{\infty}$$

Step 3

Find polynomial $p(x)$ of degree d which satisfies $p'' + 2\omega p' + (\omega' + \omega^2 - r)p = 0$. Then the solution to $z'' = rz$ is given by

$$z = pe^{\int \omega dx}$$