$$
\begin{array}{ll}
\text{I} & f_0 + g_0 = 0 \qquad \Rightarrow \quad g_0 = -f_0 = 4 f_0 \\
\text{II} & f_0 + f_1 + g_0 + g_1 + g_2 + g_3 = 0 \\
\text{III} & g_0 + 2g_1 + 4g_2 + 8g_3 = 0 \\
\text{IV} & 4f_0 + 12 f_1 + g_0 + 3g_1 + 9g_2 + 27 g_3 = 0 \\
\text{V} & 2f_0 + 8 f_1 + g_0 \; 4g_1 + 16 g_2 + 64 g_3 = 0
\end{array}
$$

$$
\begin{array}{ll}
\text{II} & f_1 + g_1 + g_2 + g_3 = 0 \\
\text{III} & 4f_0 + 2g_1 + 4g_2 + 3g_3 = 0 \\
\text{IV} & 3f_0 + 2f_1 + 3g_1 + 4g_2 + 2g_3 = 0 \\
\text{V} & f_0 + 3f_1 + 4g_1 + g_2 + 4g_3 = 0
\end{array}
$$

---

f_0	f_1	g_1	g_2	g_3
0	1	1	1	1
4	0	2	4	3
3	2	3	4	2
1	3	4	1	4

	f_1	f	g_1	g_2	g_3	
✗	1	0	1	1	1	
	0	4	2	4	3	/ oh
	2	3	3	4	2	$/ \cdot (-\frac{1}{2}) = \cdot(-3) = \cdot 2$
	3	1	4	1	4	$/ \cdot (-\frac{1}{3}) = \cdot(-2) = \cdot 3$

---

	f_1	f	g_1	g_2	g_3	
	1	0	1	1	1	
✗	0	4	2	4	3	
	0	1	2	4	0	$/ \cdot (-\frac{1}{4}) = \cdot(-4) = \cdot 1$
	0	3	3	4	3	$/ \cdot (-\frac{4}{3}) = \cdot(-4 \cdot 2) = \cdot 2$

---

	f_1	f	g_1	g_2	g_3	
	1	0	1	1	1	
	0	4	2	4	3	
✗	0	0	4	3	3	
	0	0	3	2	4	$/ \cdot (-\frac{4}{3}) = \cdot 2$

---

0 0 0 2 1

	f_1	f_0	g_1	g_2	g_3
II	1	0	1	1	1
III	0	4	2	4	3
IV	0	0	4	3	3
V	0	0	0	2	1

chose, e.g., $g_2 = 1$:

V $\quad 2 + g_3 = 0 \quad \Rightarrow \quad g_3 = -2 = 3$

IV $\quad 4g_1 + 3 + 3 = 0 \quad \Rightarrow \quad g_1 = -\frac{12}{4} = -3 = 2$

III $\quad 4f_0 + 4 + 4 + 3 = 0 \quad \Rightarrow \quad f_0 = -\frac{2}{4} = -8 = 2$

II $\quad f_1 + 2 + 1 + 3 = 0 \quad \Rightarrow \quad f_1 = -1 = 4$