

$$w = 0$$

$$\frac{\hat{E}_2 E_4 E_6}{\Delta} = \mathcal{F}(2, 1, 0) - 5 \mathcal{F}(1, 1, 0) - 144$$

$$\frac{\hat{E}_2^2 E_4^2}{\Delta} = \frac{1}{5} \mathcal{F}(3, 1, 0) - 4 \mathcal{F}(2, 1, 0) + 13 \mathcal{F}(1, 1, 0) + 144$$

$$\frac{\hat{E}_2^3 E_6}{\Delta} = \frac{3}{175} \mathcal{F}(4, 1, 0) - \frac{3}{5} \mathcal{F}(3, 1, 0) + \frac{33}{5} \mathcal{F}(2, 1, 0) - 17 \mathcal{F}(1, 1, 0) - 144$$

$$\begin{aligned} \frac{\hat{E}_2^4 E_4}{\Delta} = & \frac{1}{1225} \mathcal{F}(5, 1, 0) - \frac{6}{175} \mathcal{F}(4, 1, 0) + \frac{18}{35} \mathcal{F}(3, 1, 0) - \frac{16}{5} \mathcal{F}(2, 1, 0) \\ & + \frac{29}{5} \mathcal{F}(1, 1, 0) + \frac{144}{5} \end{aligned}$$

$$\begin{aligned} \frac{\hat{E}_2^6}{\Delta} = & \frac{1}{1926925} \mathcal{F}(7, 1, 0) - \frac{3}{2695} \mathcal{F}(5, 1, 0) + \frac{6}{175} \mathcal{F}(4, 1, 0) - \frac{3}{7} \mathcal{F}(3, 1, 0) \\ & + \frac{12}{5} \mathcal{F}(2, 1, 0) - \frac{29}{7} \mathcal{F}(1, 1, 0) - \frac{144}{7} \end{aligned}$$

$$w = -2$$

$$\frac{\hat{E}_2 E_4^2}{\Delta} = \frac{1}{40} \mathcal{F}(3, 1, -2) - \frac{1}{3} \mathcal{F}(2, 1, -2)$$

$$\frac{\hat{E}_2^2 E_6}{\Delta} = \frac{1}{525} \mathcal{F}(4, 1, -2) - \frac{1}{20} \mathcal{F}(3, 1, -2) + \frac{11}{30} \mathcal{F}(2, 1, -2)$$

$$\frac{\hat{E}_2^3 E_4}{\Delta} = \frac{1}{11760} \mathcal{F}(5, 1, -2) - \frac{1}{350} \mathcal{F}(4, 1, -2) + \frac{9}{280} \mathcal{F}(3, 1, -2) - \frac{2}{15} \mathcal{F}(2, 1, -2)$$

$$\begin{aligned} \frac{\hat{E}_2^5}{\Delta} = & \frac{1}{19819800} \mathcal{F}(7, 1, -2) - \frac{1}{12936} \mathcal{F}(5, 1, -2) + \frac{1}{525} \mathcal{F}(4, 1, -2) - \frac{1}{56} \mathcal{F}(3, 1, -2) \\ & + \frac{1}{15} \mathcal{F}(2, 1, -2) \end{aligned}$$

$$w = -4$$

$$\frac{\hat{E}_2 E_6}{\Delta} = \frac{1}{2520} \mathcal{F}(4, 1, -4) - \frac{1}{120} \mathcal{F}(3, 1, -4)$$

$$\frac{\hat{E}_2^2 E_4}{\Delta} = \frac{1}{70560} \mathcal{F}(5, 1, -4) - \frac{1}{2520} \mathcal{F}(4, 1, -4) + \frac{1}{280} \mathcal{F}(3, 1, -4)$$

$$\frac{\hat{E}_2^4}{\Delta} = \frac{1}{148648500} \mathcal{F}(7, 1, -4) - \frac{1}{129360} \mathcal{F}(5, 1, -4) + \frac{1}{6300} \mathcal{F}(4, 1, -4) - \frac{1}{840} \mathcal{F}(3, 1, -4)$$

$$w = -6$$

$$\frac{\hat{E}_2 E_4}{\Delta} = \frac{1}{241920} \mathcal{F}(5, 1, -6) - \frac{1}{10080} \mathcal{F}(4, 1, -6)$$

$$\frac{\hat{E}_2^3}{\Delta} = \frac{1}{792792000} \mathcal{F}(7, 1, -6) - \frac{1}{887040} \mathcal{F}(5, 1, -6) + \frac{1}{50400} \mathcal{F}(4, 1, -6)$$

$$w = -8$$

$$\frac{\hat{E}_2^2}{\Delta} = \frac{1}{2854051200} \mathcal{F}(7, 1, -8) - \frac{1}{3991680} \mathcal{F}(5, 1, -8)$$

$$w = -10$$

$$\frac{\hat{E}_2}{\Delta} = \frac{1}{6277020800} \mathcal{F}(7, 1, -10)$$