> $Order := 10;$

$$Order := 10 \tag{1}$$

> $taylor(\arcsin(f(x)), x = 0);$

$$\arcsin(f(0)) + \frac{D(f)(0)}{\sqrt{1-f(0)^2}}\, x + \left(\frac{1}{2}\, \frac{f(0)\, D(f)(0)^2}{\left(1-f(0)^2\right)^{3/2}} + \frac{1}{2}\, \frac{D^{(2)}(f)(0)}{\sqrt{1-f(0)^2}} \right) x^2 \tag{2}$$

$$+ \left(\frac{1}{3}\, \frac{D(f)(0)\left(-\frac{1}{2}\, \frac{-f(0)\, D^{(2)}(f)(0) - D(f)(0)^2}{1-f(0)^2} + \frac{3}{2}\, \frac{f(0)^2\, D(f)(0)^2}{\left(1-f(0)^2\right)^2} \right)}{\sqrt{1-f(0)^2}} \right.$$

$$\left. + \frac{1}{3}\, \frac{D^{(2)}(f)(0)\, f(0)\, D(f)(0)}{\left(1-f(0)^2\right)^{3/2}} + \frac{1}{6}\, \frac{D^{(3)}(f)(0)}{\sqrt{1-f(0)^2}} \right) x^3$$

$$+ \left(\frac{1}{4}\, \frac{1}{\sqrt{1-f(0)^2}} \left(D(f)(0) \left(-\frac{1}{2}\, \frac{-\frac{1}{3} f(0)\, D^{(3)}(f)(0) - D(f)(0)\, D^{(2)}(f)(0)}{1-f(0)^2} \right.\right.\right.$$

$$\left.\left.\left. - \frac{3}{2}\, \frac{f(0)\, D(f)(0)\left(-f(0)\, D^{(2)}(f)(0) - D(f)(0)^2 \right)}{\left(1-f(0)^2\right)^2} + \frac{5}{2}\, \frac{f(0)^3\, D(f)(0)^3}{\left(1-f(0)^2\right)^3} \right) \right)\right.$$

$$+ \frac{1}{4}\, \frac{D^{(2)}(f)(0)\left(-\frac{1}{2}\, \frac{-f(0)\, D^{(2)}(f)(0) - D(f)(0)^2}{1-f(0)^2} + \frac{3}{2}\, \frac{f(0)^2\, D(f)(0)^2}{\left(1-f(0)^2\right)^2} \right)}{\sqrt{1-f(0)^2}}$$

$$\left. + \frac{1}{8}\, \frac{D^{(3)}(f)(0)\, f(0)\, D(f)(0)}{\left(1-f(0)^2\right)^{3/2}} + \frac{1}{24}\, \frac{D^{(4)}(f)(0)}{\sqrt{1-f(0)^2}} \right) x^4$$

$$+ \left(\frac{1}{5}\, \frac{1}{\sqrt{1-f(0)^2}} \left(D(f)(0) \left(\vphantom{\frac{1}{12}} \right.\right.\right.$$

$$- \frac{1}{2}\, \frac{-\frac{1}{12} f(0)\, D^{(4)}(f)(0) - \frac{1}{3} D(f)(0)\, D^{(3)}(f)(0) - \frac{1}{4} D^{(2)}(f)(0)^2}{1-f(0)^2}$$

$$- \frac{3}{2}\, \frac{f(0)\, D(f)(0)\left(-\frac{1}{3} f(0)\, D^{(3)}(f)(0) - D(f)(0)\, D^{(2)}(f)(0) \right)}{\left(1-f(0)^2\right)^2}$$

$$+ \frac{3}{8} \frac{\left(-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2\right)^2}{\left(1 - f(0)^2\right)^2}$$

$$\left.\left.- \frac{15}{4} \frac{f(0)^2 \, D(f)(0)^2 \left(-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2\right)}{\left(1 - f(0)^2\right)^3} + \frac{35}{8} \frac{f(0)^4 \, D(f)(0)^4}{\left(1 - f(0)^2\right)^4}\right)\right)$$

$$+ \frac{1}{5} \frac{1}{\sqrt{1 - f(0)^2}} \left(D^{(2)}(f)(0) \left(\vphantom{\frac{1}{1}} \right.\right.$$

$$- \frac{1}{2} \frac{-\frac{1}{3} f(0) \, D^{(3)}(f)(0) - D(f)(0) \, D^{(2)}(f)(0)}{1 - f(0)^2}$$

$$\left.\left.- \frac{3}{2} \frac{f(0) \, D(f)(0) \left(-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2\right)}{\left(1 - f(0)^2\right)^2} + \frac{5}{2} \frac{f(0)^3 \, D(f)(0)^3}{\left(1 - f(0)^2\right)^3}\right)\right)$$

$$+ \frac{1}{10} \frac{D^{(3)}(f)(0) \left(-\frac{1}{2} \frac{-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2}{1 - f(0)^2} + \frac{3}{2} \frac{f(0)^2 \, D(f)(0)^2}{\left(1 - f(0)^2\right)^2}\right)}{\sqrt{1 - f(0)^2}}$$

$$\left.+ \frac{1}{30} \frac{D^{(4)}(f)(0) \, f(0) \, D(f)(0)}{\left(1 - f(0)^2\right)^{3/2}} + \frac{1}{120} \frac{D^{(5)}(f)(0)}{\sqrt{1 - f(0)^2}}\right) x^5$$

$$+ \left(\frac{1}{6} \frac{1}{\sqrt{1 - f(0)^2}} \left(D(f)(0) \left(\vphantom{\frac{1}{1}} \right.\right.\right.$$

$$- \frac{1}{2} \frac{1}{1 - f(0)^2} \left(-\frac{1}{60} f(0) \, D^{(5)}(f)(0) - \frac{1}{12} D(f)(0) \, D^{(4)}(f)(0) \right.$$

$$\left.- \frac{1}{6} D^{(2)}(f)(0) \, D^{(3)}(f)(0) \right)$$

$$-\frac{3}{2}\,\frac{1}{\left(1-f(0)^2\right)^2}\left(f(0)\,\mathrm{D}(f)\,(0)\left(-\frac{1}{12}f(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.\right.$$

$$\left.\left.-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\right)\right)$$

$$+\frac{3}{4}\,\frac{1}{\left(1-f(0)^2\right)^2}\left(\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)\left(-\frac{1}{3}f(0)\,\mathrm{D}^{(3)}(f)\,(0)\right.\right.$$

$$\left.\left.-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)\right)$$

$$-\frac{5}{4}\,\frac{f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-\frac{1}{3}f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^3}$$

$$+\frac{5}{4}\,\frac{f(0)\,\mathrm{D}(f)\,(0)\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^3}+\frac{5}{768}\,\frac{1}{1-f(0)^2}\left(\left(\right.\right.$$

$$-\frac{384\,f(0)\,\mathrm{D}(f)\,(0)\left(-\frac{1}{3}f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$\left.+\frac{96\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^2}\right)f(0)\,\mathrm{D}(f)\,(0)$$

$$\left.\left.-\frac{35}{4}\,\frac{f(0)^3\,\mathrm{D}(f)\,(0)^3\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)}{\left(1-f(0)^2\right)^4}+\frac{63}{8}\,\frac{f(0)^5\,\mathrm{D}(f)\,(0)^5}{\left(1-f(0)^2\right)^5}\right)\right)$$

$$+ \frac{1}{6}\, \frac{1}{\sqrt{1-f(0)^2}} \left(D^{(2)}(f)(0) \left(\right. \right.$$

$$- \frac{1}{2}\, \frac{-\frac{1}{12} f(0)\, D^{(4)}(f)(0) - \frac{1}{3}\, D(f)(0)\, D^{(3)}(f)(0) - \frac{1}{4}\, D^{(2)}(f)(0)^2}{1-f(0)^2}$$

$$- \frac{3}{2}\, \frac{f(0)\, D(f)(0) \left(-\frac{1}{3} f(0)\, D^{(3)}(f)(0) - D(f)(0)\, D^{(2)}(f)(0) \right)}{\left(1-f(0)^2 \right)^2}$$

$$+ \frac{3}{8}\, \frac{\left(-f(0)\, D^{(2)}(f)(0) - D(f)(0)^2 \right)^2}{\left(1-f(0)^2 \right)^2}$$

$$- \frac{15}{4}\, \frac{f(0)^2\, D(f)(0)^2 \left(-f(0)\, D^{(2)}(f)(0) - D(f)(0)^2 \right)}{\left(1-f(0)^2 \right)^3} + \frac{35}{8}\, \frac{f(0)^4\, D(f)(0)^4}{\left(1-f(0)^2 \right)^4} \left. \right) \left. \right)$$

$$+ \frac{1}{12}\, \frac{1}{\sqrt{1-f(0)^2}} \left(D^{(3)}(f)(0) \left(\right. \right.$$

$$- \frac{1}{2}\, \frac{-\frac{1}{3} f(0)\, D^{(3)}(f)(0) - D(f)(0)\, D^{(2)}(f)(0)}{1-f(0)^2}$$

$$- \frac{3}{2}\, \frac{f(0)\, D(f)(0) \left(-f(0)\, D^{(2)}(f)(0) - D(f)(0)^2 \right)}{\left(1-f(0)^2 \right)^2} + \frac{5}{2}\, \frac{f(0)^3\, D(f)(0)^3}{\left(1-f(0)^2 \right)^3} \left. \right) \left. \right)$$

$$+ \frac{1}{36}\, \frac{D^{(4)}(f)(0) \left(-\frac{1}{2}\, \frac{-f(0)\, D^{(2)}(f)(0) - D(f)(0)^2}{1-f(0)^2} + \frac{3}{2}\, \frac{f(0)^2\, D(f)(0)^2}{\left(1-f(0)^2 \right)^2} \right)}{\sqrt{1-f(0)^2}}$$

$$+ \frac{1}{144}\, \frac{D^{(5)}(f)(0)\, f(0)\, D(f)(0)}{\left(1-f(0)^2 \right)^{3/2}} + \frac{1}{720}\, \frac{D^{(6)}(f)(0)}{\sqrt{1-f(0)^2}} \left. \right) x^6$$

$$+ \left(\frac{1}{7} \, \frac{1}{\sqrt{1 - f(0)^2}} \left(\mathrm{D}(f)\,(0) \left(-\frac{1}{2} \, \frac{1}{1 - f(0)^2} \left(-\frac{1}{360} \, f(0) \, \mathrm{D}^{(6)}(f)\,(0) \right. \right. \right. \right.$$

$$\left. -\frac{1}{60} \, \mathrm{D}(f)\,(0) \, \mathrm{D}^{(5)}(f)\,(0) - \frac{1}{24} \, \mathrm{D}^{(2)}(f)\,(0) \, \mathrm{D}^{(4)}(f)\,(0) - \frac{1}{36} \, \mathrm{D}^{(3)}(f)\,(0)^2 \right)$$

$$-\frac{3}{2} \, \frac{1}{\left(1 - f(0)^2\right)^2} \left(f(0) \, \mathrm{D}(f)\,(0) \left(-\frac{1}{60} \, f(0) \, \mathrm{D}^{(5)}(f)\,(0) \right. \right.$$

$$\left. \left. -\frac{1}{12} \, \mathrm{D}(f)\,(0) \, \mathrm{D}^{(4)}(f)\,(0) - \frac{1}{6} \, \mathrm{D}^{(2)}(f)\,(0) \, \mathrm{D}^{(3)}(f)\,(0) \right) \right)$$

$$+\frac{3}{4} \, \frac{1}{\left(1 - f(0)^2\right)^2} \left(\left(-f(0) \, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2 \right) \left(-\frac{1}{12} \, f(0) \, \mathrm{D}^{(4)}(f)\,(0) \right. \right.$$

$$\left. \left. -\frac{1}{3} \, \mathrm{D}(f)\,(0) \, \mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4} \, \mathrm{D}^{(2)}(f)\,(0)^2 \right) \right)$$

$$+\frac{3}{8} \, \frac{\left(-\frac{1}{3} \, f(0) \, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0) \, \mathrm{D}^{(2)}(f)\,(0) \right)^2}{\left(1 - f(0)^2\right)^2}$$

$$-\frac{5}{4}\,\frac{1}{\left(1-f(0)^2\right)^3}\left(f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.\right.$$

$$\left.\left.-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\right)\right)$$

$$+\frac{5}{4}\,\frac{1}{\left(1-f(0)^2\right)^3}\left(f(0)\,\mathrm{D}(f)\,(0)\,\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)\right($$

$$\left.\left.-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)\right)-\frac{5}{1536}\,\frac{1}{1-f(0)^2}\left(\left(\vphantom{\frac{1}{1}}\right.\right.$$

$$-\frac{384\,f(0)\,\mathrm{D}(f)\,(0)\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+\frac{96\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^2}\right)\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)\right)$$

$$+\frac{5}{3072}\,\frac{1}{1-f(0)^2}\left(\left(-\frac{1}{\left(1-f(0)^2\right)^2}\left(1536\,f(0)\,\mathrm{D}(f)\,(0)\,\left(\vphantom{\frac{1}{1}}\right.\right.\right.\right.$$

$$-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0) - \frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\Big)\Big)$$

$$+\frac{1}{\left(1-f(0)^2\right)^2}\left(768\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)\right.\right.$$

$$\left.\left.\left.-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)\right)\right)f(0)\,\mathrm{D}(f)\,(0)\Big)$$

$$-\frac{35}{16}\,\frac{f(0)^3\,\mathrm{D}(f)\,(0)^3\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^4}$$

$$+\frac{105}{32}\,\frac{f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^4}$$

$$+\frac{7}{4096}\,\frac{1}{1-f(0)^2}\left(\!\left(\vphantom{\frac{1}{2}}\right.\right.$$

$$-\frac{1280\,f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^3}$$

$$+ \frac{1280\, f(0)\, D(f)\,(0)\,\left(-f(0)\, D^{(2)}(f)\,(0) - D(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^3} + \frac{20}{3}\, \frac{1}{1 - f(0)^2}\left(\left(\vphantom{\frac{1}{1}}\right.\right.$$

$$- \frac{384\, f(0)\, D(f)\,(0)\,\left(-\dfrac{1}{3}\, f(0)\, D^{(3)}(f)\,(0) - D(f)\,(0)\, D^{(2)}(f)\,(0)\right)}{\left(1 - f(0)^2\right)^2}$$

$$+ \frac{96\,\left(-f(0)\, D^{(2)}(f)\,(0) - D(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^2}\right)f(0)\, D(f)\,(0)\left.\right)f(0)\, D(f)\,(0)\left.\right)$$

$$- \frac{315}{16}\, \frac{f(0)^4\, D(f)\,(0)^4\,\left(-f(0)\, D^{(2)}(f)\,(0) - D(f)\,(0)^2\right)}{\left(1 - f(0)^2\right)^5}$$

$$+ \frac{231}{16}\, \frac{f(0)^6\, D(f)\,(0)^6}{\left(1 - f(0)^2\right)^6}\left.\right)\left.\right) + \frac{1}{7}\, \frac{1}{\sqrt{1 - f(0)^2}}\left(D^{(2)}(f)\,(0)\left(\vphantom{\frac{1}{1}}\right.\right.$$

$$- \frac{1}{2}\, \frac{1}{1 - f(0)^2}\left(-\frac{1}{60}\, f(0)\, D^{(5)}(f)\,(0) - \frac{1}{12}\, D(f)\,(0)\, D^{(4)}(f)\,(0)\right.$$

$$- \frac{1}{6}\, D^{(2)}(f)\,(0)\, D^{(3)}(f)\,(0)\left.\right)$$

$$- \frac{3}{2}\, \frac{1}{\left(1 - f(0)^2\right)^2}\left(f(0)\, D(f)\,(0)\left(-\frac{1}{12}\, f(0)\, D^{(4)}(f)\,(0)\right.\right.$$

$$- \frac{1}{3} \, \mathrm{D}(f)\,(0) \, \mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4} \, \mathrm{D}^{(2)}(f)\,(0)^2 \Big) \Big)$$

$$+ \frac{3}{4} \, \frac{1}{\left(1 - f(0)^2\right)^2} \left(\left(-f(0) \, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2 \right) \left(-\frac{1}{3} \, f(0) \, \mathrm{D}^{(3)}(f)\,(0) \right. \right.$$

$$\left. \left. - \mathrm{D}(f)\,(0) \, \mathrm{D}^{(2)}(f)\,(0) \right) \right)$$

$$- \frac{5}{4} \, \frac{f(0)^2 \, \mathrm{D}(f)\,(0)^2 \left(-\frac{1}{3} \, f(0) \, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0) \, \mathrm{D}^{(2)}(f)\,(0) \right)}{\left(1 - f(0)^2\right)^3}$$

$$+ \frac{5}{4} \, \frac{f(0) \, \mathrm{D}(f)\,(0) \left(-f(0) \, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2 \right)^2}{\left(1 - f(0)^2\right)^3} + \frac{5}{768} \, \frac{1}{1 - f(0)^2} \left(\left(\vphantom{\frac{1}{1}} \right. \right.$$

$$- \frac{384 f(0) \, \mathrm{D}(f)\,(0) \left(-\frac{1}{3} \, f(0) \, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0) \, \mathrm{D}^{(2)}(f)\,(0) \right)}{\left(1 - f(0)^2\right)^2}$$

$$+ \frac{96 \left(-f(0) \, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2 \right)^2}{\left(1 - f(0)^2\right)^2} \right) f(0) \, \mathrm{D}(f)\,(0) \right)$$

$$- \frac{35}{4} \, \frac{f(0)^3 \, \mathrm{D}(f)\,(0)^3 \left(-f(0) \, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2 \right)}{\left(1 - f(0)^2\right)^4} + \frac{63}{8} \, \frac{f(0)^5 \, \mathrm{D}(f)\,(0)^5}{\left(1 - f(0)^2\right)^5} \right) \right)$$

$$+ \frac{1}{14} \, \frac{1}{\sqrt{1 - f(0)^2}} \left(\mathrm{D}^{(3)}(f)\,(0) \left(\vphantom{\frac{1}{1}} \right. \right.$$

$$-\frac{1}{2}\frac{-\frac{1}{12}f(0)\,D^{(4)}(f)(0)-\frac{1}{3}D(f)(0)\,D^{(3)}(f)(0)-\frac{1}{4}D^{(2)}(f)(0)^2}{1-f(0)^2}$$

$$-\frac{3}{2}\frac{f(0)\,D(f)(0)\left(-\frac{1}{3}f(0)\,D^{(3)}(f)(0)-D(f)(0)\,D^{(2)}(f)(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+\frac{3}{8}\frac{\left(-f(0)\,D^{(2)}(f)(0)-D(f)(0)^2\right)^2}{\left(1-f(0)^2\right)^2}$$

$$-\frac{15}{4}\frac{f(0)^2\,D(f)(0)^2\left(-f(0)\,D^{(2)}(f)(0)-D(f)(0)^2\right)}{\left(1-f(0)^2\right)^3}+\frac{35}{8}\frac{f(0)^4\,D(f)(0)^4}{\left(1-f(0)^2\right)^4}\Bigg)\Bigg)$$

$$+\frac{1}{42}\frac{1}{\sqrt{1-f(0)^2}}\Bigg(D^{(4)}(f)(0)\Bigg($$

$$-\frac{1}{2}\frac{-\frac{1}{3}f(0)\,D^{(3)}(f)(0)-D(f)(0)\,D^{(2)}(f)(0)}{1-f(0)^2}$$

$$-\frac{3}{2}\frac{f(0)\,D(f)(0)\left(-f(0)\,D^{(2)}(f)(0)-D(f)(0)^2\right)}{\left(1-f(0)^2\right)^2}+\frac{5}{2}\frac{f(0)^3\,D(f)(0)^3}{\left(1-f(0)^2\right)^3}\Bigg)\Bigg)$$

$$+\frac{1}{168}\frac{D^{(5)}(f)(0)\left(-\frac{1}{2}\frac{-f(0)\,D^{(2)}(f)(0)-D(f)(0)^2}{1-f(0)^2}+\frac{3}{2}\frac{f(0)^2\,D(f)(0)^2}{\left(1-f(0)^2\right)^2}\right)}{\sqrt{1-f(0)^2}}$$

$$+\frac{1}{840}\frac{D^{(6)}(f)(0)\,f(0)\,D(f)(0)}{\left(1-f(0)^2\right)^{3/2}}+\frac{1}{5040}\frac{D^{(7)}(f)(0)}{\sqrt{1-f(0)^2}}\Bigg)x^7$$

$$+ \left(\frac{1}{8} \; \frac{1}{\sqrt{1-f(0)^2}} \left(D(f)(0) \left(-\frac{1}{2} \; \frac{1}{1-f(0)^2} \left(-\frac{1}{2520} f(0) \, D^{(7)}(f)(0) \right. \right. \right. \right.$$

$$- \frac{1}{360} D(f)(0) \, D^{(6)}(f)(0) - \frac{1}{120} D^{(2)}(f)(0) \, D^{(5)}(f)(0)$$

$$\left. - \frac{1}{72} D^{(3)}(f)(0) \, D^{(4)}(f)(0) \right) - \frac{3}{2} \; \frac{1}{\left(1-f(0)^2\right)^2} \left(f(0) \, D(f)(0) \left(\vphantom{\frac{1}{1}} \right. \right.$$

$$- \frac{1}{360} f(0) \, D^{(6)}(f)(0) - \frac{1}{60} D(f)(0) \, D^{(5)}(f)(0) - \frac{1}{24} D^{(2)}(f)(0) \, D^{(4)}(f)(0)$$

$$\left. \left. - \frac{1}{36} D^{(3)}(f)(0)^2 \right) \right) + \frac{3}{4} \; \frac{1}{\left(1-f(0)^2\right)^2} \left(\left(-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2 \right) \left(\vphantom{\frac{1}{1}} \right. \right.$$

$$-\frac{1}{60} f(0)\, \mathrm{D}^{(5)}(f)\,(0) - \frac{1}{12}\, \mathrm{D}(f)\,(0)\, \mathrm{D}^{(4)}(f)\,(0) - \frac{1}{6}\, \mathrm{D}^{(2)}(f)\,(0)\, \mathrm{D}^{(3)}(f)\,(0) \Bigg)\Bigg)$$

$$+ \frac{3}{4}\, \frac{1}{\left(1 - f(0)^2\right)^2} \Bigg(\Bigg(-\frac{1}{3} f(0)\, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0) \Bigg) \Bigg($$

$$-\frac{1}{12} f(0)\, \mathrm{D}^{(4)}(f)\,(0) - \frac{1}{3}\, \mathrm{D}(f)\,(0)\, \mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4}\, \mathrm{D}^{(2)}(f)\,(0)^2 \Bigg)\Bigg)$$

$$- \frac{5}{4}\, \frac{1}{\left(1 - f(0)^2\right)^3} \Bigg(f(0)^2\, \mathrm{D}(f)\,(0)^2 \Bigg(-\frac{1}{60} f(0)\, \mathrm{D}^{(5)}(f)\,(0)$$

$$- \frac{1}{12}\, \mathrm{D}(f)\,(0)\, \mathrm{D}^{(4)}(f)\,(0) - \frac{1}{6}\, \mathrm{D}^{(2)}(f)\,(0)\, \mathrm{D}^{(3)}(f)\,(0) \Bigg)\Bigg)$$

$$+ \frac{5}{4} \; \frac{1}{\left(1 - f(0)^2\right)^3} \left(f(0) \, D(f)\,(0) \, \left(-f(0) \, D^{(2)}(f)\,(0) - D(f)\,(0)^2\right) \right($$

$$- \frac{1}{12} f(0) \, D^{(4)}(f)\,(0) - \frac{1}{3} \, D(f)\,(0) \, D^{(3)}(f)\,(0) - \frac{1}{4} \, D^{(2)}(f)\,(0)^2 \bigg)\bigg)$$

$$- \frac{5}{1536} \; \frac{1}{1 - f(0)^2} \left(\left(\vphantom{\frac{1}{3}}\right.\right.$$

$$- \frac{384 \, f(0) \, D(f)\,(0) \, \left(-\dfrac{1}{3} f(0) \, D^{(3)}(f)\,(0) - D(f)\,(0) \, D^{(2)}(f)\,(0)\right)}{\left(1 - f(0)^2\right)^2}$$

$$+ \frac{96 \left(-f(0) \, D^{(2)}(f)\,(0) - D(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^2}\right)\left(-\frac{1}{3} f(0) \, D^{(3)}(f)\,(0)\right.$$

$$-D(f)(0)\,D^{(2)}(f)(0)\Bigg)\Bigg] - \frac{5}{6144}\,\frac{1}{1-f(0)^2}\Bigg(\Bigg($$

$$-\frac{1}{\left(1-f(0)^2\right)^2}\Bigg(1536\,f(0)\,D(f)(0)\left(-\frac{1}{12}\,f(0)\,D^{(4)}(f)(0)\right.$$

$$-\frac{1}{3}\,D(f)(0)\,D^{(3)}(f)(0)-\frac{1}{4}\,D^{(2)}(f)(0)^2\Bigg)\Bigg)$$

$$+\frac{1}{\left(1-f(0)^2\right)^2}\Bigg(768\left(-f(0)\,D^{(2)}(f)(0)-D(f)(0)^2\right)\left(-\frac{1}{3}\,f(0)\,D^{(3)}(f)(0)\right.$$

$$-D(f)(0)\,D^{(2)}(f)(0)\Bigg)\Bigg)\Bigg)\left(-f(0)\,D^{(2)}(f)(0)-D(f)(0)^2\right)\Bigg)$$

$$+ \frac{5}{12288} \frac{1}{1-f(0)^2} \left(\left(-\frac{1}{\left(1-f(0)^2\right)^2} \left(6144\, f(0)\, \mathrm{D}(f)\,(0)\, \left(\right. \right. \right.$$

$$-\frac{1}{60}\, f(0)\, \mathrm{D}^{(5)}(f)\,(0) - \frac{1}{12}\, \mathrm{D}(f)\,(0)\, \mathrm{D}^{(4)}(f)\,(0) - \frac{1}{6}\, \mathrm{D}^{(2)}(f)\,(0)\, \mathrm{D}^{(3)}(f)\,(0) \right) \right)$$

$$+ \frac{1}{\left(1-f(0)^2\right)^2} \left(3072 \left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2 \right) \left(-\frac{1}{12}\, f(0)\, \mathrm{D}^{(4)}(f)\,(0) \right. \right.$$

$$\left. -\frac{1}{3}\, \mathrm{D}(f)\,(0)\, \mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4}\, \mathrm{D}^{(2)}(f)\,(0)^2 \right) \right)$$

$$+ \frac{1536 \left(-\frac{1}{3}\, f(0)\, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0) \right)^2}{\left(1-f(0)^2\right)^2} \right) f(0)\, \mathrm{D}(f)\,(0) \right)$$

$$-\frac{35}{16}\,\frac{1}{\left(1-f(0)^2\right)^4}\left(f(0)^3\,\mathrm{D}(f)\,(0)^3\left(-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.\right.$$

$$\left.\left.-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\right)\right)$$

$$+\frac{105}{32}\,\frac{1}{\left(1-f(0)^2\right)^4}\left(f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)\left(\vphantom{\frac{1}{3}}\right.\right.$$

$$\left.\left.-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)\right)-\frac{7}{8192}\,\frac{1}{1-f(0)^2}\left(\left(\vphantom{\frac{1}{3}}\right.\right.$$

$$-\frac{1280\,f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-\dfrac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^3}$$

$$+ \frac{1280\, f(0)\, \mathrm{D}(f)\,(0)\, \left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^3} + \frac{20}{3}\, \frac{1}{1 - f(0)^2}\left(\left(\vphantom{\int}\right.\right.$$

$$- \frac{384\, f(0)\, \mathrm{D}(f)\,(0)\, \left(-\dfrac{1}{3}\, f(0)\, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1 - f(0)^2\right)^2}$$

$$+ \frac{96\, \left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^2}\left.\right) f(0)\, \mathrm{D}(f)\,(0)\left.\right)\left.\right)\left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0)\right.$$

$$\left.- \mathrm{D}(f)\,(0)^2\right)\left.\right) + \frac{7}{16384}\, \frac{1}{1 - f(0)^2}\left(\left(\vphantom{\int}\right.\right.$$

$$- \frac{1}{\left(1 - f(0)^2\right)^3}\left(5120\, f(0)^2\, \mathrm{D}(f)\,(0)^2\left(-\frac{1}{12}\, f(0)\, \mathrm{D}^{(4)}(f)\,(0)\right.\right.$$

$$-\frac{1}{3} D(f)(0) D^{(3)}(f)(0) - \frac{1}{4} D^{(2)}(f)(0)^2 \bigg)\bigg)$$

$$+\frac{1}{\left(1-f(0)^2\right)^3}\bigg(5120 f(0) D(f)(0)\left(-f(0) D^{(2)}(f)(0) - D(f)(0)^2\right)\bigg($$

$$-\frac{1}{3} f(0) D^{(3)}(f)(0) - D(f)(0) D^{(2)}(f)(0)\bigg)\bigg) - \frac{40}{3}\ \frac{1}{1-f(0)^2}\bigg(\bigg($$

$$-\frac{384 f(0) D(f)(0)\left(-\dfrac{1}{3} f(0) D^{(3)}(f)(0) - D(f)(0) D^{(2)}(f)(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+\frac{96\left(-f(0) D^{(2)}(f)(0) - D(f)(0)^2\right)^2}{\left(1-f(0)^2\right)^2}\bigg)\left(-f(0) D^{(2)}(f)(0) - D(f)(0)^2\right)\bigg)$$

$$+ \frac{20}{3} \, \frac{1}{1 - f(0)^2} \left(\left(- \frac{1}{\left(1 - f(0)^2\right)^2} \left(1536 f(0) \, D(f)(0) \left(\right. \right. \right.$$

$$- \frac{1}{12} f(0) \, D^{(4)}(f)(0) - \frac{1}{3} D(f)(0) \, D^{(3)}(f)(0) - \frac{1}{4} D^{(2)}(f)(0)^2 \right) \right)$$

$$+ \frac{1}{\left(1 - f(0)^2\right)^2} \left(768 \left(-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2 \right) \left(- \frac{1}{3} f(0) \, D^{(3)}(f)(0) \right. \right.$$

$$- D(f)(0) \, D^{(2)}(f)(0) \right) \right) \right) f(0) \, D(f)(0) \right) \right) f(0) \, D(f)(0) \right)$$

$$- \frac{63}{16} \, \frac{f(0)^4 \, D(f)(0)^4 \left(- \frac{1}{3} f(0) \, D^{(3)}(f)(0) - D(f)(0) \, D^{(2)}(f)(0) \right)}{\left(1 - f(0)^2\right)^5}$$

$$+ \frac{63}{8} \, \frac{f(0)^3 \, \mathrm{D}(f)(0)^3 \left(-f(0) \, \mathrm{D}^{(2)}(f)(0) - \mathrm{D}(f)(0)^2\right)^2}{\left(1 - f(0)^2\right)^5}$$

$$+ \frac{9}{20480} \, \frac{1}{1 - f(0)^2} \left(\left(\vphantom{\Bigg|}\right.\right.$$

$$- \frac{8960 \, f(0)^3 \, \mathrm{D}(f)(0)^3 \left(-\frac{1}{3} f(0) \, \mathrm{D}^{(3)}(f)(0) - \mathrm{D}(f)(0) \, \mathrm{D}^{(2)}(f)(0)\right)}{\left(1 - f(0)^2\right)^4}$$

$$+ \frac{13440 \, f(0)^2 \, \mathrm{D}(f)(0)^2 \left(-f(0) \, \mathrm{D}^{(2)}(f)(0) - \mathrm{D}(f)(0)^2\right)^2}{\left(1 - f(0)^2\right)^4} + \frac{1}{1 - f(0)^2} \left(7 \left(\vphantom{\Bigg|}\right.\right.$$

$$- \frac{1280 \, f(0)^2 \, \mathrm{D}(f)(0)^2 \left(-\frac{1}{3} f(0) \, \mathrm{D}^{(3)}(f)(0) - \mathrm{D}(f)(0) \, \mathrm{D}^{(2)}(f)(0)\right)}{\left(1 - f(0)^2\right)^3}$$

$$+ \frac{1280\, f(0)\, \mathrm{D}(f)\,(0)\,\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^3} + \frac{20}{3}\, \frac{1}{1 - f(0)^2}\left(\left(\vphantom{\Bigg(}\right.\right.$$

$$- \frac{384\, f(0)\, \mathrm{D}(f)\,(0)\,\left(-\dfrac{1}{3}\, f(0)\,\mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1 - f(0)^2\right)^2}$$

$$\left. + \frac{96\,\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^2}\right) f(0)\, \mathrm{D}(f)\,(0)\left.\vphantom{\Bigg(}\right) f(0)\, \mathrm{D}(f)\,(0)\left.\vphantom{\Bigg(}\right)$$

$$f(0)\, \mathrm{D}(f)\,(0)\left.\vphantom{\Bigg(}\right) - \frac{693}{16}\, \frac{f(0)^5\, \mathrm{D}(f)\,(0)^5\,\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)}{\left(1 - f(0)^2\right)^6}$$

$$+ \frac{429}{16}\, \frac{f(0)^7\, \mathrm{D}(f)\,(0)^7}{\left(1 - f(0)^2\right)^7}\left.\vphantom{\Bigg(}\right)\right) + \frac{1}{8}\, \frac{1}{\sqrt{1 - f(0)^2}}\left(\mathrm{D}^{(2)}(f)\,(0)\left(\vphantom{\Bigg(}\right.\right.$$

$$- \frac{1}{2}\, \frac{1}{1 - f(0)^2}\left(-\frac{1}{360}\, f(0)\,\mathrm{D}^{(6)}(f)\,(0) - \frac{1}{60}\, \mathrm{D}(f)\,(0)\,\mathrm{D}^{(5)}(f)\,(0)\right.$$

$$-\frac{1}{24}\,\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0)-\frac{1}{36}\,\mathrm{D}^{(3)}(f)\,(0)^{2}\Bigg)$$

$$-\frac{3}{2}\,\frac{1}{\left(1-f(0)^{2}\right)^{2}}\Bigg(f(0)\,\mathrm{D}(f)\,(0)\,\Bigg(-\frac{1}{60}\,f(0)\,\mathrm{D}^{(5)}(f)\,(0)$$

$$-\frac{1}{12}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0)-\frac{1}{6}\,\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)\Bigg)\Bigg)$$

$$+\frac{3}{4}\,\frac{1}{\left(1-f(0)^{2}\right)^{2}}\Bigg(\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^{2}\right)\Bigg(-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)$$

$$-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^{2}\Bigg)\Bigg)$$

$$+\frac{3}{8}\,\frac{\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)^{2}}{\left(1-f(0)^{2}\right)^{2}}$$

$$-\frac{5}{4}\,\frac{1}{\left(1-f(0)^{2}\right)^{3}}\Bigg(f(0)^{2}\,\mathrm{D}(f)\,(0)^{2}\,\Bigg(-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)$$

$$-\frac{1}{3}\, \mathrm{D}(f)\,(0)\, \mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4}\, \mathrm{D}^{(2)}(f)\,(0)^2 \Big)\Big)$$

$$+\frac{5}{4}\, \frac{1}{\left(1-f(0)^2\right)^3}\left(f(0)\,\mathrm{D}(f)\,(0)\,\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)\Big(\right.$$

$$-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\Big)\Big) - \frac{5}{1536}\,\frac{1}{1-f(0)^2}\left(\left(\right.\right.$$

$$-\frac{384\,f(0)\,\mathrm{D}(f)\,(0)\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+\frac{96\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^2}\right)\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)\Big)$$

$$+\frac{5}{3072}\,\frac{1}{1-f(0)^2}\left(\left(-\frac{1}{\left(1-f(0)^2\right)^2}\left(1536\,f(0)\,\mathrm{D}(f)\,(0)\Big(\right.\right.\right.$$

$$-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\Big)\Big)$$

$$+ \frac{1}{\left(1-f(0)^2\right)^2}\left(768\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)\left(-\frac{1}{3}f(0)\,\mathrm{D}^{(3)}(f)\,(0)\right.\right.$$

$$\left.\left.\left.-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)\right)\right)f(0)\,\mathrm{D}(f)\,(0)\Bigg)$$

$$-\frac{35}{16}\frac{f(0)^3\,\mathrm{D}(f)\,(0)^3\left(-\frac{1}{3}f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^4}$$

$$+\frac{105}{32}\frac{f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^4}$$

$$+\frac{7}{4096}\frac{1}{1-f(0)^2}\Bigg(\Bigg($$

$$-\frac{1280\,f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-\frac{1}{3}f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^3}$$

$$+\frac{1280\,f(0)\,\mathrm{D}(f)\,(0)\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^3}+\frac{20}{3}\frac{1}{1-f(0)^2}\Bigg(\Bigg($$

$$-\ \frac{384\, f(0)\, \mathrm{D}(f)\,(0)\left(-\dfrac{1}{3}f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+\left.\left.\frac{96\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^2}\right)f(0)\,\mathrm{D}(f)\,(0)\right)\right)f(0)\,\mathrm{D}(f)\,(0)\right)$$

$$-\ \frac{315}{16}\ \frac{f(0)^4\,\mathrm{D}(f)\,(0)^4\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)}{\left(1-f(0)^2\right)^5}$$

$$+\left.\left.\frac{231}{16}\ \frac{f(0)^6\,\mathrm{D}(f)\,(0)^6}{\left(1-f(0)^2\right)^6}\right)\right)+\frac{1}{16}\ \frac{1}{\sqrt{1-f(0)^2}}\left(\mathrm{D}^{(3)}(f)\,(0)\left(\vphantom{\frac{1}{1}}\right.\right.$$

$$-\frac{1}{2}\ \frac{1}{1-f(0)^2}\left(-\frac{1}{60}f(0)\,\mathrm{D}^{(5)}(f)\,(0)-\frac{1}{12}\mathrm{D}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.$$

$$\left.-\frac{1}{6}\,\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)\right)$$

$$-\frac{3}{2}\ \frac{1}{\left(1-f(0)^2\right)^2}\left(f(0)\,\mathrm{D}(f)\,(0)\left(-\frac{1}{12}f(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.\right.$$

$$\left.\left.-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\right)\right)$$

$$+ \frac{3}{4} \frac{1}{\left(1 - f(0)^2\right)^2} \left(\left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2 \right) \left(-\frac{1}{3} f(0)\, \mathrm{D}^{(3)}(f)\,(0) \right. \right.$$

$$\left. \left. - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0) \right) \right)$$

$$- \frac{5}{4} \frac{f(0)^2\, \mathrm{D}(f)\,(0)^2 \left(-\frac{1}{3} f(0)\, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0) \right)}{\left(1 - f(0)^2\right)^3}$$

$$+ \frac{5}{4} \frac{f(0)\, \mathrm{D}(f)\,(0) \left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2 \right)^2}{\left(1 - f(0)^2\right)^3} + \frac{5}{768} \frac{1}{1 - f(0)^2} \left(\left(\vphantom{\frac{1}{3}} \right. \right.$$

$$- \frac{384\, f(0)\, \mathrm{D}(f)\,(0) \left(-\frac{1}{3} f(0)\, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0) \right)}{\left(1 - f(0)^2\right)^2}$$

$$+ \frac{96 \left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2 \right)^2}{\left(1 - f(0)^2\right)^2} \Bigg) f(0)\, \mathrm{D}(f)\,(0) \Bigg)$$

$$- \frac{35}{4} \frac{f(0)^3\, \mathrm{D}(f)\,(0)^3 \left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2 \right)}{\left(1 - f(0)^2\right)^4} + \frac{63}{8} \frac{f(0)^5\, \mathrm{D}(f)\,(0)^5}{\left(1 - f(0)^2\right)^5} \Bigg) \Bigg)$$

$$+ \frac{1}{48} \frac{1}{\sqrt{1 - f(0)^2}} \Bigg(\mathrm{D}^{(4)}(f)\,(0) \Bigg($$

$$- \frac{1}{2} \frac{-\frac{1}{12} f(0)\, \mathrm{D}^{(4)}(f)\,(0) - \frac{1}{3} \mathrm{D}(f)\,(0)\, \mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4} \mathrm{D}^{(2)}(f)\,(0)^2}{1 - f(0)^2}$$

$$-\frac{3}{2}\,\frac{f(0)\,\mathrm{D}(f)\,(0)\left(-\dfrac{1}{3}f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+\frac{3}{8}\,\frac{\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^2}$$

$$-\frac{15}{4}\,\frac{f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)}{\left(1-f(0)^2\right)^3}+\frac{35}{8}\,\frac{f(0)^4\,\mathrm{D}(f)\,(0)^4}{\left(1-f(0)^2\right)^4}\Bigg)\Bigg)$$

$$+\frac{1}{192}\,\frac{1}{\sqrt{1-f(0)^2}}\Bigg(\mathrm{D}^{(5)}(f)\,(0)\Bigg($$

$$-\frac{1}{2}\,\frac{-\dfrac{1}{3}f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)}{1-f(0)^2}$$

$$-\frac{3}{2}\,\frac{f(0)\,\mathrm{D}(f)\,(0)\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)}{\left(1-f(0)^2\right)^2}+\frac{5}{2}\,\frac{f(0)^3\,\mathrm{D}(f)\,(0)^3}{\left(1-f(0)^2\right)^3}\Bigg)\Bigg)$$

$$+\frac{1}{960}\,\frac{\mathrm{D}^{(6)}(f)\,(0)\left(-\dfrac{1}{2}\,\dfrac{-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2}{1-f(0)^2}+\dfrac{3}{2}\,\dfrac{f(0)^2\,\mathrm{D}(f)\,(0)^2}{\left(1-f(0)^2\right)^2}\right)}{\sqrt{1-f(0)^2}}$$

$$+\frac{1}{5760}\,\frac{\mathrm{D}^{(7)}(f)\,(0)\,f(0)\,\mathrm{D}(f)\,(0)}{\left(1-f(0)^2\right)^{3/2}}+\frac{1}{40320}\,\frac{\mathrm{D}^{(8)}(f)\,(0)}{\sqrt{1-f(0)^2}}\Bigg)x^8$$

$$+\Bigg(\frac{1}{9}\,\frac{1}{\sqrt{1-f(0)^2}}\Bigg(\mathrm{D}(f)\,(0)\Bigg(-\frac{3}{2}\,\frac{1}{\left(1-f(0)^2\right)^2}\Big(f(0)\,\mathrm{D}(f)\,(0)\Big($$

$$-\frac{1}{2520}\,f(0)\,\mathrm{D}^{(7)}(f)\,(0)-\frac{1}{360}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(6)}(f)\,(0)-\frac{1}{120}\,\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(5)}(f)\,(0)$$

$$-\frac{1}{72}\,\mathrm{D}^{(3)}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0)\Bigg)\Bigg)-\frac{5}{4}\,\frac{1}{\left(1-f(0)^2\right)^3}\,\Bigg(f(0)^2\,\mathrm{D}(f)\,(0)^2\,\Bigg($$

$$-\frac{1}{360}\,f(0)\,\mathrm{D}^{(6)}(f)\,(0)-\frac{1}{60}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(5)}(f)\,(0)-\frac{1}{24}\,\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0)$$

$$-\frac{1}{36}\,\mathrm{D}^{(3)}(f)\,(0)^2\Bigg)\Bigg)+\frac{5}{49152}\,\frac{1}{1-f(0)^2}\,\Bigg(\Bigg($$

$$-\frac{1}{\left(1-f(0)^2\right)^2}\,\Bigg(24576\,f(0)\,\mathrm{D}(f)\,(0)\,\Bigg(-\frac{1}{360}\,f(0)\,\mathrm{D}^{(6)}(f)\,(0)$$

$$-\frac{1}{60}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(5)}(f)\,(0)-\frac{1}{24}\,\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0)-\frac{1}{36}\,\mathrm{D}^{(3)}(f)\,(0)^{2}\bigg)\bigg)$$

$$+\frac{1}{\left(1-f(0)^{2}\right)^{2}}\bigg(12288\,\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^{2}\right)\left(-\frac{1}{60}\,f(0)\,\mathrm{D}^{(5)}(f)\,(0)\right.$$

$$\left.-\frac{1}{12}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0)-\frac{1}{6}\,\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)\right)\bigg)$$

$$+\frac{1}{\left(1-f(0)^{2}\right)^{2}}\bigg(12288\,\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)\bigg($$

$$-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^{2}\bigg)\bigg)\bigg)$$

$$f(0)\,\mathrm{D}(f)\,(0)\Bigg) - \frac{35}{16}\,\frac{1}{\left(1-f(0)^2\right)^4}\left(f(0)^3\,\mathrm{D}(f)\,(0)^3\left(-\frac{1}{60}\,f(0)\,\mathrm{D}^{(5)}(f)\,(0)\right.\right.$$

$$\left.\left.-\frac{1}{12}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0) - \frac{1}{6}\,\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)\right)\right)$$

$$+\frac{7}{65536}\,\frac{1}{1-f(0)^2}\left(\left(-\frac{1}{\left(1-f(0)^2\right)^3}\left(20480\,f(0)^2\,\mathrm{D}(f)\,(0)^2\left(\vphantom{\frac11}\right.\right.\right.$$

$$\left.\left.\left.-\frac{1}{60}\,f(0)\,\mathrm{D}^{(5)}(f)\,(0) - \frac{1}{12}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0) - \frac{1}{6}\,\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)\right)\right)\right.$$

$$+\frac{1}{\left(1-f(0)^2\right)^3}\left(20480\,f(0)\,\mathrm{D}(f)\,(0)\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)\left(\vphantom{\frac11}\right.\right.$$

$$-\frac{1}{12} f(0) \, \mathrm{D}^{(4)}(f) \, (0) - \frac{1}{3} \, \mathrm{D}(f) \, (0) \, \mathrm{D}^{(3)}(f) \, (0) - \frac{1}{4} \, \mathrm{D}^{(2)}(f) \, (0)^2 \Bigg) \Bigg)$$

$$-\frac{160}{3} \, \frac{1}{1 - f(0)^2} \Bigg(\Bigg($$

$$-\frac{384 \, f(0) \, \mathrm{D}(f) \, (0) \left(-\frac{1}{3} f(0) \, \mathrm{D}^{(3)}(f) \, (0) - \mathrm{D}(f) \, (0) \, \mathrm{D}^{(2)}(f) \, (0) \right)}{\left(1 - f(0)^2 \right)^2}$$

$$+\frac{96 \left(-f(0) \, \mathrm{D}^{(2)}(f) \, (0) - \mathrm{D}(f) \, (0)^2 \right)^2}{\left(1 - f(0)^2 \right)^2} \Bigg) \left(-\frac{1}{3} f(0) \, \mathrm{D}^{(3)}(f) \, (0) \right.$$

$$\left. - \mathrm{D}(f) \, (0) \, \mathrm{D}^{(2)}(f) \, (0) \right) \Bigg] - \frac{40}{3} \, \frac{1}{1 - f(0)^2} \Bigg(\Bigg($$

$$- \frac{1}{\left(1 - f(0)^2\right)^2} \left(1536 \, f(0) \, \mathrm{D}(f)\,(0) \left(-\frac{1}{12} \, f(0) \, \mathrm{D}^{(4)}(f)\,(0)\right.\right.$$

$$\left.\left. - \frac{1}{3} \, \mathrm{D}(f)\,(0) \, \mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4} \, \mathrm{D}^{(2)}(f)\,(0)^2 \right)\right)$$

$$+ \frac{1}{\left(1 - f(0)^2\right)^2} \left(768 \left(-f(0) \, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right) \left(-\frac{1}{3} \, f(0) \, \mathrm{D}^{(3)}(f)\,(0)\right.\right.$$

$$\left.\left.\left. - \mathrm{D}(f)\,(0) \, \mathrm{D}^{(2)}(f)\,(0) \right)\right)\right) \left(-f(0) \, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)\right)$$

$$+ \frac{20}{3} \, \frac{1}{1 - f(0)^2} \left(\left(-\frac{1}{\left(1 - f(0)^2\right)^2} \left(6144 \, f(0) \, \mathrm{D}(f)\,(0) \left(\right.\right.\right.\right.$$

$$-\frac{1}{60}\,f(0)\,\mathrm{D}^{(5)}(f)\,(0) - \frac{1}{12}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0) - \frac{1}{6}\,\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)\Big)\Big)$$

$$+\frac{1}{\left(1-f(0)^2\right)^2}\Big(3072\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)\Big(-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)$$

$$-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\Big)\Big)$$

$$+\frac{1536\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)^2}{\left(1-f(0)^2\right)^2}\Bigg)f(0)\,\mathrm{D}(f)\,(0)\Big)\Big)$$

$$f(0)\,\mathrm{D}(f)\,(0)\Bigg)$$

$$-\frac{63}{16}\,\frac{1}{\left(1-f(0)^2\right)^5}\left(f(0)^4\,\mathrm{D}(f)\,(0)^4\left(-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.\right.$$

$$\left.\left.-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\right)\right)+\frac{9}{81920}\,\frac{1}{1-f(0)^2}\left(\left(\right.\right.$$

$$-\frac{1}{\left(1-f(0)^2\right)^4}\left(35840\,f(0)^3\,\mathrm{D}(f)\,(0)^3\left(-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.\right.$$

$$\left.\left.-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\right)\right)$$

$$+\frac{1}{\left(1-f(0)^2\right)^4}\left(53760\,f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)\left(\rule{0pt}{12pt}\right.\right.$$

$$-\frac{1}{3} f(0)\, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0)\Big)\Big) - \frac{1}{1 - f(0)^2}\left(14\left(\vphantom{\int}\right.\right.$$

$$-\frac{1280\, f(0)^2\, \mathrm{D}(f)\,(0)^2\left(-\dfrac{1}{3} f(0)\, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1 - f(0)^2\right)^3}$$

$$+\frac{1280\, f(0)\, \mathrm{D}(f)\,(0)\left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^3} + \frac{20}{3}\,\frac{1}{1 - f(0)^2}\left(\left(\vphantom{\int}\right.\right.$$

$$-\frac{384\, f(0)\, \mathrm{D}(f)\,(0)\left(-\dfrac{1}{3} f(0)\, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1 - f(0)^2\right)^2}$$

$$+\frac{96\left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^2}\right) f(0)\, \mathrm{D}(f)\,(0)\right)\left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0)\right.$$

$$-\mathrm{D}(f)\,(0)^2\Bigg)\Bigg] + \frac{1}{1-f(0)^2}\Bigg(7\Bigg(-\frac{1}{\left(1-f(0)^2\right)^3}\Bigg(5120\,f(0)^2\,\mathrm{D}(f)\,(0)^2\bigg($$

$$-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0) - \frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\bigg)\Bigg)$$

$$+ \frac{1}{\left(1-f(0)^2\right)^3}\Bigg(5120\,f(0)\,\mathrm{D}(f)\,(0)\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)\bigg($$

$$-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\bigg)\Bigg) - \frac{40}{3}\,\frac{1}{1-f(0)^2}\Bigg(\Bigg($$

$$-\frac{384\,f(0)\,\mathrm{D}(f)\,(0)\left(-\dfrac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+ \frac{96 \left(-f(0)\, D^{(2)}(f)\,(0) - D(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^2}\Bigg)\left(-f(0)\, D^{(2)}(f)\,(0) - D(f)\,(0)^2\right)\Bigg)$$

$$+ \frac{20}{3}\,\frac{1}{1 - f(0)^2}\Bigg(\Bigg(-\frac{1}{\left(1 - f(0)^2\right)^2}\Bigg(1536\, f(0)\, D(f)\,(0)\Bigg($$

$$-\frac{1}{12}\, f(0)\, D^{(4)}(f)\,(0) - \frac{1}{3}\, D(f)\,(0)\, D^{(3)}(f)\,(0) - \frac{1}{4}\, D^{(2)}(f)\,(0)^2\Bigg)\Bigg)$$

$$+ \frac{1}{\left(1 - f(0)^2\right)^2}\Bigg(768 \left(-f(0)\, D^{(2)}(f)\,(0) - D(f)\,(0)^2\right)\Bigg(-\frac{1}{3}\, f(0)\, D^{(3)}(f)\,(0)$$

$$- D(f)\,(0)\, D^{(2)}(f)\,(0)\Bigg)\Bigg)\Bigg)\, f(0)\, D(f)\,(0)\Bigg)\Bigg)\, f(0)\, D(f)\,(0)\Bigg)\Bigg)\, f(0)\, D(f)\,(0)\Bigg)$$

$$-\frac{231}{32}\,\frac{f(0)^5\,\mathrm{D}(f)\,(0)^5\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^6}$$

$$+\frac{1155}{64}\,\frac{f(0)^4\,\mathrm{D}(f)\,(0)^4\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^6}$$

$$+\frac{11}{98304}\,\frac{1}{1-f(0)^2}\left(\left(\vphantom{\frac{1}{1}}\right.\right.$$

$$-\frac{64512\,f(0)^4\,\mathrm{D}(f)\,(0)^4\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^5}$$

$$+\frac{129024\,f(0)^3\,\mathrm{D}(f)\,(0)^3\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^5}$$

$$+ \frac{36}{5} \, \frac{1}{1 - f(0)^2} \left(\left(\right. \right.$$

$$- \frac{8960 \, f(0)^3 \, \mathrm{D}(f)\,(0)^3 \left(-\frac{1}{3} f(0) \, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0) \right)}{\left(1 - f(0)^2 \right)^4}$$

$$+ \frac{13440 \, f(0)^2 \, \mathrm{D}(f)\,(0)^2 \left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2 \right)^2}{\left(1 - f(0)^2 \right)^4} + \frac{1}{1 - f(0)^2} \left(7 \left(\right. \right.$$

$$- \frac{1280 \, f(0)^2 \, \mathrm{D}(f)\,(0)^2 \left(-\frac{1}{3} f(0) \, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0) \right)}{\left(1 - f(0)^2 \right)^3}$$

$$+ \frac{1280 \, f(0) \, \mathrm{D}(f)\,(0) \left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2 \right)^2}{\left(1 - f(0)^2 \right)^3} + \frac{20}{3} \, \frac{1}{1 - f(0)^2} \left(\left(\right. \right.$$

$$-\frac{384\,f(0)\,D(f)\,(0)\left(-\frac{1}{3}f(0)\,D^{(3)}(f)\,(0)-D(f)\,(0)\,D^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+\frac{96\left(-f(0)\,D^{(2)}(f)\,(0)-D(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^2}\Bigg)f(0)\,D(f)\,(0)\Bigg)\Bigg)f(0)\,D(f)\,(0)\Bigg)\Bigg)$$

$$f(0)\,D(f)\,(0)\Bigg)\Bigg)f(0)\,D(f)\,(0)\Bigg)$$

$$-\frac{3003}{32}\,\frac{f(0)^6\,D(f)\,(0)^6\left(-f(0)\,D^{(2)}(f)\,(0)-D(f)\,(0)^2\right)}{\left(1-f(0)^2\right)^7}$$

$$+\frac{6435}{128}\,\frac{f(0)^8\,D(f)\,(0)^8}{\left(1-f(0)^2\right)^8}-\frac{7}{8192}\,\frac{1}{1-f(0)^2}\Bigg(\Bigg($$

$$-\frac{1280\,f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^3}$$

$$+\frac{1280\,f(0)\,\mathrm{D}(f)\,(0)\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^3}+\frac{20}{3}\,\frac{1}{1-f(0)^2}\Bigg(\Bigg($$

$$-\frac{384\,f(0)\,\mathrm{D}(f)\,(0)\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+\frac{96\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^2}\Bigg)f(0)\,\mathrm{D}(f)\,(0)\Bigg)\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)\right.$$

$$\left.-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)\Bigg)-\frac{7}{32768}\,\frac{1}{1-f(0)^2}\Bigg(\Bigg($$

$$-\frac{1}{\left(1-f(0)^2\right)^3}\left(5120\,f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.\right.$$

$$\left.\left.-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\right)\right)$$

$$+\frac{1}{\left(1-f(0)^2\right)^3}\left(5120\,f(0)\,\mathrm{D}(f)\,(0)\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)\left(\rule{0pt}{2em}\right.\right.$$

$$\left.\left.-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)\right)-\frac{40}{3}\,\frac{1}{1-f(0)^2}\left(\rule{0pt}{2em}\right.$$

$$-\frac{384\,f(0)\,\mathrm{D}(f)\,(0)\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+ \frac{96 \left(-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2\right)^2}{\left(1 - f(0)^2\right)^2} \right) \left(-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2\right) \Bigg)$$

$$+ \frac{20}{3} \, \frac{1}{1 - f(0)^2} \Bigg(\Bigg(-\frac{1}{\left(1 - f(0)^2\right)^2} \Bigg(1536 \, f(0) \, D(f)(0) \, \Bigg($$

$$-\frac{1}{12} \, f(0) \, D^{(4)}(f)(0) - \frac{1}{3} \, D(f)(0) \, D^{(3)}(f)(0) - \frac{1}{4} \, D^{(2)}(f)(0)^2\Bigg)\Bigg)$$

$$+ \frac{1}{\left(1 - f(0)^2\right)^2} \Bigg(768 \left(-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2\right) \left(-\frac{1}{3} \, f(0) \, D^{(3)}(f)(0)\right.$$

$$\left.- D(f)(0) \, D^{(2)}(f)(0)\right)\Bigg)\Bigg) f(0) \, D(f)(0)\Bigg) \left(-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2\right)\Bigg)$$

$$-\frac{9}{40960}\,\frac{1}{1-f(0)^2}\left(\left(\vphantom{\frac{1}{1}}\right.\right.$$

$$-\frac{8960\,f(0)^3\,\mathrm{D}(f)\,(0)^3\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^4}$$

$$+\frac{13440\,f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^4}+\frac{1}{1-f(0)^2}\left(7\left(\vphantom{\frac{1}{1}}\right.\right.$$

$$-\frac{1280\,f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^3}$$

$$+\frac{1280\,f(0)\,\mathrm{D}(f)\,(0)\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^3}+\frac{20}{3}\,\frac{1}{1-f(0)^2}\left(\left(\vphantom{\frac{1}{1}}\right.\right.$$

$$-\frac{384\,f(0)\,\mathrm{D}(f)\,(0)\left(-\dfrac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+\left.\left.\left.\frac{96\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^2}\right)f(0)\,\mathrm{D}(f)\,(0)\right)\right|f(0)\,\mathrm{D}(f)\,(0)\Bigg)\Bigg)\,\Bigg($$

$$\left.-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)-\frac{5}{1536}\,\frac{1}{1-f(0)^2}\left(\!\left(\vphantom{\frac11}\right.\right.$$

$$-\frac{384\,f(0)\,\mathrm{D}(f)\,(0)\left(-\dfrac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+\left.\frac{96\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^2}\right)\left(-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.$$

$$-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\Bigg)\Bigg]-\frac{5}{6144}\,\frac{1}{1-f(0)^2}\Bigg(\Bigg($$

$$-\frac{1}{\left(1-f(0)^2\right)^2}\Bigg(1536\,f(0)\,\mathrm{D}(f)\,(0)\left(-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.$$

$$-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\Bigg)\Bigg)$$

$$+\frac{1}{\left(1-f(0)^2\right)^2}\Bigg(768\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)\right.$$

$$-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\Bigg)\Bigg)\Bigg)\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)\Bigg)$$

$$-\frac{5}{24576}\,\frac{1}{1-f(0)^2}\left(\left(-\frac{1}{\left(1-f(0)^2\right)^2}\left(6144\,f(0)\,\mathrm{D}(f)\,(0)\left(\vphantom{\frac{1}{60}}\right.\right.\right.\right.$$

$$-\frac{1}{60}\,f(0)\,\mathrm{D}^{(5)}(f)\,(0)-\frac{1}{12}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0)-\frac{1}{6}\,\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)\left.\vphantom{\frac{1}{60}}\right)\right)$$

$$+\frac{1}{\left(1-f(0)^2\right)^2}\left(3072\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)\left(-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.\right.$$

$$-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\left.\vphantom{\frac{1}{12}}\right)\right)$$

$$+\frac{1536\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)^2}{\left(1-f(0)^2\right)^2}\left.\vphantom{\frac{1536}{\left(1-f(0)^2\right)^2}}\right)\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)\right.$$

$$-\mathrm{D}(f)(0)^2\bigg)\bigg] + \frac{3}{4}\,\frac{1}{\left(1-f(0)^2\right)^2}\bigg(\left(-f(0)\,\mathrm{D}^{(2)}(f)(0) - \mathrm{D}(f)(0)^2\right)\bigg($$

$$-\frac{1}{360}\,f(0)\,\mathrm{D}^{(6)}(f)(0) - \frac{1}{60}\,\mathrm{D}(f)(0)\,\mathrm{D}^{(5)}(f)(0) - \frac{1}{24}\,\mathrm{D}^{(2)}(f)(0)\,\mathrm{D}^{(4)}(f)(0)$$

$$-\frac{1}{36}\,\mathrm{D}^{(3)}(f)(0)^2\bigg)\bigg) + \frac{3}{4}\,\frac{1}{\left(1-f(0)^2\right)^2}\bigg(\bigg(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)(0)$$

$$-\mathrm{D}(f)(0)\,\mathrm{D}^{(2)}(f)(0)\bigg)\left(-\frac{1}{60}\,f(0)\,\mathrm{D}^{(5)}(f)(0) - \frac{1}{12}\,\mathrm{D}(f)(0)\,\mathrm{D}^{(4)}(f)(0)\right.$$

$$-\frac{1}{6}\,\mathrm{D}^{(2)}(f)(0)\,\mathrm{D}^{(3)}(f)(0)\bigg)\bigg) + \frac{63}{8}\,\frac{1}{\left(1-f(0)^2\right)^5}\bigg(f(0)^3\,\mathrm{D}(f)(0)^3\,\bigg($$

$$-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\Big)\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)\Big)$$

$$+\frac{5}{4}\,\frac{1}{\left(1 - f(0)^2\right)^3}\Big(f(0)\,\mathrm{D}(f)\,(0)\,\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)\Big($$

$$-\frac{1}{60}\,f(0)\,\mathrm{D}^{(5)}(f)\,(0) - \frac{1}{12}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0) - \frac{1}{6}\,\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)\Big)\Big)$$

$$+\frac{105}{32}\,\frac{1}{\left(1 - f(0)^2\right)^4}\Big(f(0)^2\,\mathrm{D}(f)\,(0)^2\,\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)\Big($$

$$-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0) - \frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\Big)\Big)$$

$$+ \frac{3}{8} \frac{\left(-\frac{1}{12} f(0)\, \mathrm{D}^{(4)}(f)\,(0) - \frac{1}{3}\, \mathrm{D}(f)\,(0)\, \mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4}\, \mathrm{D}^{(2)}(f)\,(0)^2 \right)^2}{\left(1 - f(0)^2 \right)^2}$$

$$- \frac{1}{2} \frac{1}{1 - f(0)^2} \left(-\frac{1}{20160} f(0)\, \mathrm{D}^{(8)}(f)\,(0) - \frac{1}{2520}\, \mathrm{D}(f)\,(0)\, \mathrm{D}^{(7)}(f)\,(0) \right.$$

$$- \frac{1}{720}\, \mathrm{D}^{(2)}(f)\,(0)\, \mathrm{D}^{(6)}(f)\,(0) - \frac{1}{360}\, \mathrm{D}^{(3)}(f)\,(0)\, \mathrm{D}^{(5)}(f)\,(0) - \frac{1}{576}\, \mathrm{D}^{(4)}(f)\,(0)^2 \bigg)$$

$$\bigg) \bigg) + \frac{1}{9} \frac{1}{\sqrt{1 - f(0)^2}} \left(\mathrm{D}^{(2)}(f)\,(0) \left(-\frac{1}{2} \frac{1}{1 - f(0)^2} \right(\right.$$

$$- \frac{1}{2520} f(0)\, \mathrm{D}^{(7)}(f)\,(0) - \frac{1}{360}\, \mathrm{D}(f)\,(0)\, \mathrm{D}^{(6)}(f)\,(0) - \frac{1}{120}\, \mathrm{D}^{(2)}(f)\,(0)\, \mathrm{D}^{(5)}(f)\,(0)$$

$$-\frac{1}{72} \, D^{(3)}(f)\,(0) \, D^{(4)}(f)\,(0)\Bigg) - \frac{3}{2} \, \frac{1}{\left(1-f(0)^2\right)^2} \Bigg(f(0) \, D(f)\,(0) \, \Bigg($$

$$-\frac{1}{360} \, f(0) \, D^{(6)}(f)\,(0) - \frac{1}{60} \, D(f)\,(0) \, D^{(5)}(f)\,(0) - \frac{1}{24} \, D^{(2)}(f)\,(0) \, D^{(4)}(f)\,(0)$$

$$-\frac{1}{36} \, D^{(3)}(f)\,(0)^2\Bigg)\Bigg) + \frac{3}{4} \, \frac{1}{\left(1-f(0)^2\right)^2} \Bigg(\left(-f(0) \, D^{(2)}(f)\,(0) - D(f)\,(0)^2 \right) \Bigg($$

$$-\frac{1}{60} \, f(0) \, D^{(5)}(f)\,(0) - \frac{1}{12} \, D(f)\,(0) \, D^{(4)}(f)\,(0) - \frac{1}{6} \, D^{(2)}(f)\,(0) \, D^{(3)}(f)\,(0) \Bigg) \Bigg)$$

$$+ \frac{3}{4} \, \frac{1}{\left(1-f(0)^2\right)^2} \Bigg(\left(-\frac{1}{3} \, f(0) \, D^{(3)}(f)\,(0) - D(f)\,(0) \, D^{(2)}(f)\,(0) \right) \Bigg($$

$$-\frac{1}{12} f(0)\, D^{(4)}(f)\,(0) - \frac{1}{3}\, D(f)\,(0)\, D^{(3)}(f)\,(0) - \frac{1}{4}\, D^{(2)}(f)\,(0)^2 \Big)\Big)$$

$$-\frac{5}{4}\ \frac{1}{\left(1 - f(0)^2\right)^3}\left(f(0)^2\, D(f)\,(0)^2\left(-\frac{1}{60}\, f(0)\, D^{(5)}(f)\,(0)\right.\right.$$

$$-\frac{1}{12}\, D(f)\,(0)\, D^{(4)}(f)\,(0) - \frac{1}{6}\, D^{(2)}(f)\,(0)\, D^{(3)}(f)\,(0)\Big)\Big)$$

$$+\frac{5}{4}\ \frac{1}{\left(1 - f(0)^2\right)^3}\left(f(0)\, D(f)\,(0)\,\left(-f(0)\, D^{(2)}(f)\,(0) - D(f)\,(0)^2\right)\right(\ $$

$$-\frac{1}{12} f(0)\, D^{(4)}(f)\,(0) - \frac{1}{3}\, D(f)\,(0)\, D^{(3)}(f)\,(0) - \frac{1}{4}\, D^{(2)}(f)\,(0)^2 \Big)\Big)$$

$$-\frac{5}{1536}\,\frac{1}{1-f(0)^2}\left(\left(\vphantom{\Bigg(}\right.\right.$$

$$-\frac{384\,f(0)\,\mathrm{D}(f)\,(0)\left(-\dfrac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+\frac{96\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^2}\Bigg)\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)\right.$$

$$\left.-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)\Bigg)-\frac{5}{6144}\,\frac{1}{1-f(0)^2}\left(\left(\vphantom{\Bigg(}\right.\right.$$

$$-\frac{1}{\left(1-f(0)^2\right)^2}\left(1536\,f(0)\,\mathrm{D}(f)\,(0)\left(-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.\right.$$

$$-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\Bigg)\Bigg)$$

$$+\frac{1}{\left(1-f(0)^2\right)^2}\Bigg(768\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)\right.$$

$$-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\Bigg)\Bigg)\Bigg)\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)\Bigg)$$

$$+\frac{5}{12288}\,\frac{1}{1-f(0)^2}\Bigg(\Bigg(-\frac{1}{\left(1-f(0)^2\right)^2}\Bigg(6144\,f(0)\,\mathrm{D}(f)\,(0)\Bigg($$

$$-\frac{1}{60}\,f(0)\,\mathrm{D}^{(5)}(f)\,(0)-\frac{1}{12}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0)-\frac{1}{6}\,\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)\Bigg)\Bigg)$$

$$+ \frac{1}{\left(1 - f(0)^2\right)^2} \left(3072 \left(-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2 \right) \left(-\frac{1}{12} f(0) \, D^{(4)}(f)(0) \right. \right.$$

$$\left. -\frac{1}{3} \, D(f)(0) \, D^{(3)}(f)(0) - \frac{1}{4} \, D^{(2)}(f)(0)^2 \right) \Bigg)$$

$$+ \frac{1536 \left(-\frac{1}{3} f(0) \, D^{(3)}(f)(0) - D(f)(0) \, D^{(2)}(f)(0) \right)^2}{\left(1 - f(0)^2\right)^2} \Bigg) f(0) \, D(f)(0) \Bigg)$$

$$- \frac{35}{16} \frac{1}{\left(1 - f(0)^2\right)^4} \left(f(0)^3 \, D(f)(0)^3 \left(-\frac{1}{12} f(0) \, D^{(4)}(f)(0) \right. \right.$$

$$\left. -\frac{1}{3} \, D(f)(0) \, D^{(3)}(f)(0) - \frac{1}{4} \, D^{(2)}(f)(0)^2 \right) \Bigg)$$

$$+ \frac{105}{32} \frac{1}{\left(1 - f(0)^2\right)^4} \left(f(0)^2 \, \mathrm{D}(f) \, (0)^2 \left(-f(0) \, \mathrm{D}^{(2)}(f) \, (0) - \mathrm{D}(f) \, (0)^2 \right) \right($$

$$- \frac{1}{3} f(0) \, \mathrm{D}^{(3)}(f) \, (0) - \mathrm{D}(f) \, (0) \, \mathrm{D}^{(2)}(f) \, (0) \bigg) \bigg) - \frac{7}{8192} \frac{1}{1 - f(0)^2} \Bigg(\Bigg($$

$$- \frac{1280 f(0)^2 \, \mathrm{D}(f) \, (0)^2 \left(-\dfrac{1}{3} f(0) \, \mathrm{D}^{(3)}(f) \, (0) - \mathrm{D}(f) \, (0) \, \mathrm{D}^{(2)}(f) \, (0) \right)}{\left(1 - f(0)^2\right)^3}$$

$$+ \frac{1280 f(0) \, \mathrm{D}(f) \, (0) \left(-f(0) \, \mathrm{D}^{(2)}(f) \, (0) - \mathrm{D}(f) \, (0)^2 \right)^2}{\left(1 - f(0)^2\right)^3} + \frac{20}{3} \frac{1}{1 - f(0)^2} \Bigg(\Bigg($$

$$- \frac{384 f(0) \, \mathrm{D}(f) \, (0) \left(-\dfrac{1}{3} f(0) \, \mathrm{D}^{(3)}(f) \, (0) - \mathrm{D}(f) \, (0) \, \mathrm{D}^{(2)}(f) \, (0) \right)}{\left(1 - f(0)^2\right)^2}$$

$$+ \frac{96\left(-f(0)\,D^{(2)}(f)(0) - D(f)(0)^2\right)^2}{\left(1 - f(0)^2\right)^2}\Bigg) f(0)\,D(f)(0)\Bigg)\Bigg)\left(-f(0)\,D^{(2)}(f)(0)\right.$$

$$\left. - D(f)(0)^2\right)\Bigg) + \frac{7}{16384}\,\frac{1}{1 - f(0)^2}\Bigg(\Bigg($$

$$- \frac{1}{\left(1 - f(0)^2\right)^3}\Bigg(5120\,f(0)^2\,D(f)(0)^2\left(-\frac{1}{12}\,f(0)\,D^{(4)}(f)(0)\right.$$

$$\left. - \frac{1}{3}\,D(f)(0)\,D^{(3)}(f)(0) - \frac{1}{4}\,D^{(2)}(f)(0)^2\right)\Bigg)$$

$$+ \frac{1}{\left(1 - f(0)^2\right)^3}\Bigg(5120\,f(0)\,D(f)(0)\left(-f(0)\,D^{(2)}(f)(0) - D(f)(0)^2\right)\Bigg($$

$$-\frac{1}{3} f(0)\, D^{(3)}(f)\,(0) - D(f)\,(0)\, D^{(2)}(f)\,(0) \Bigr) \Bigr) - \frac{40}{3}\,\frac{1}{1-f(0)^2}\Biggl(\Biggl($$

$$-\frac{384\, f(0)\, D(f)\,(0)\left(-\dfrac{1}{3} f(0)\, D^{(3)}(f)\,(0) - D(f)\,(0)\, D^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+\frac{96\left(-f(0)\, D^{(2)}(f)\,(0) - D(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^2}\Biggr)\left(-f(0)\, D^{(2)}(f)\,(0) - D(f)\,(0)^2\right)\Biggr)$$

$$+\frac{20}{3}\,\frac{1}{1-f(0)^2}\Biggl(\Biggl(-\frac{1}{\left(1-f(0)^2\right)^2}\Biggl(1536\, f(0)\, D(f)\,(0)\Biggl($$

$$-\frac{1}{12} f(0)\, D^{(4)}(f)\,(0) - \frac{1}{3} D(f)\,(0)\, D^{(3)}(f)\,(0) - \frac{1}{4} D^{(2)}(f)\,(0)^2\Biggr)\Biggr)$$

$$+ \frac{1}{\left(1 - f(0)^2\right)^2} \left(768 \left(-f(0)\, D^{(2)}(f)\,(0) - D(f)\,(0)^2 \right) \left(-\frac{1}{3} f(0)\, D^{(3)}(f)\,(0) \right. \right.$$

$$\left. \left. \left. \left. \left. - D(f)\,(0)\, D^{(2)}(f)\,(0) \right) \right) \right| f(0)\, D(f)\,(0) \right) \right| f(0)\, D(f)\,(0) \right)$$

$$- \frac{63}{16} \; \frac{f(0)^4\, D(f)\,(0)^4 \left(-\frac{1}{3} f(0)\, D^{(3)}(f)\,(0) - D(f)\,(0)\, D^{(2)}(f)\,(0) \right)}{\left(1 - f(0)^2\right)^5}$$

$$+ \frac{63}{8} \; \frac{f(0)^3\, D(f)\,(0)^3 \left(-f(0)\, D^{(2)}(f)\,(0) - D(f)\,(0)^2 \right)^2}{\left(1 - f(0)^2\right)^5}$$

$$+ \frac{9}{20480} \; \frac{1}{1 - f(0)^2} \left(\left(\vphantom{\frac{1}{1}} \right. \right.$$

$$-\frac{8960\, f(0)^3\, \mathrm{D}(f)\,(0)^3 \left(-\dfrac{1}{3}\, f(0)\, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1 - f(0)^2\right)^4}$$

$$+\frac{13440\, f(0)^2\, \mathrm{D}(f)\,(0)^2 \left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^4} + \frac{1}{1 - f(0)^2}\left(7\left(\rule{0pt}{2.2em}\right.\right.$$

$$-\frac{1280\, f(0)^2\, \mathrm{D}(f)\,(0)^2 \left(-\dfrac{1}{3}\, f(0)\, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1 - f(0)^2\right)^3}$$

$$+\frac{1280\, f(0)\, \mathrm{D}(f)\,(0) \left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^3} + \frac{20}{3}\,\frac{1}{1 - f(0)^2}\left(\left(\rule{0pt}{2.2em}\right.\right.$$

$$-\frac{384\, f(0)\, \mathrm{D}(f)\,(0) \left(-\dfrac{1}{3}\, f(0)\, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1 - f(0)^2\right)^2}$$

$$+ \frac{96 \left(-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2 \right)^2}{\left(1 - f(0)^2 \right)^2} \Bigg) f(0) \, D(f)(0) \Bigg) \Bigg] f(0) \, D(f)(0) \Bigg) \Bigg)$$

$$f(0) \, D(f)(0) \Bigg) - \frac{693}{16} \, \frac{f(0)^5 \, D(f)(0)^5 \left(-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2 \right)}{\left(1 - f(0)^2 \right)^6}$$

$$+ \frac{429}{16} \, \frac{f(0)^7 \, D(f)(0)^7}{\left(1 - f(0)^2 \right)^7} \Bigg) \Bigg) + \frac{1}{18} \, \frac{1}{\sqrt{1 - f(0)^2}} \Bigg(D^{(3)}(f)(0) \Bigg($$

$$- \frac{1}{2} \, \frac{1}{1 - f(0)^2} \Bigg(-\frac{1}{360} f(0) \, D^{(6)}(f)(0) - \frac{1}{60} D(f)(0) \, D^{(5)}(f)(0)$$

$$- \frac{1}{24} D^{(2)}(f)(0) \, D^{(4)}(f)(0) - \frac{1}{36} D^{(3)}(f)(0)^2 \Bigg)$$

$$- \frac{3}{2} \, \frac{1}{\left(1 - f(0)^2 \right)^2} \Bigg(f(0) \, D(f)(0) \left(-\frac{1}{60} f(0) \, D^{(5)}(f)(0) \right)$$

$$-\frac{1}{12}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0) - \frac{1}{6}\,\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)\Big)\Big)$$

$$+\frac{3}{4}\,\frac{1}{\left(1-f(0)^2\right)^2}\left(\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)\left(-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.\right.$$

$$-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\Big)\Big)$$

$$+\frac{3}{8}\,\frac{\left(-\frac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)^2}{\left(1-f(0)^2\right)^2}$$

$$-\frac{5}{4}\,\frac{1}{\left(1-f(0)^2\right)^3}\left(f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-\frac{1}{12}\,f(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.\right.$$

$$-\frac{1}{3}\,\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4}\,\mathrm{D}^{(2)}(f)\,(0)^2\Big)\Big)$$

$$+\frac{5}{4}\,\frac{1}{\left(1-f(0)^2\right)^3}\left(f(0)\,\mathrm{D}(f)\,(0)\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)\left(\vphantom{\frac{1}{1}}\right.\right.$$

$$-\frac{1}{3} f(0) \, \mathrm{D}^{(3)}(f)(0) - \mathrm{D}(f)(0) \, \mathrm{D}^{(2)}(f)(0) \bigg) \bigg) - \frac{5}{1536} \, \frac{1}{1-f(0)^2} \Bigg(\Bigg($$

$$-\frac{384 f(0) \, \mathrm{D}(f)(0) \left(-\dfrac{1}{3} f(0) \, \mathrm{D}^{(3)}(f)(0) - \mathrm{D}(f)(0) \, \mathrm{D}^{(2)}(f)(0) \right)}{\left(1 - f(0)^2\right)^2}$$

$$+ \frac{96 \left(-f(0) \, \mathrm{D}^{(2)}(f)(0) - \mathrm{D}(f)(0)^2 \right)^2}{\left(1 - f(0)^2\right)^2} \Bigg) \left(-f(0) \, \mathrm{D}^{(2)}(f)(0) - \mathrm{D}(f)(0)^2 \right) \Bigg)$$

$$+ \frac{5}{3072} \, \frac{1}{1-f(0)^2} \Bigg(\Bigg(-\frac{1}{\left(1-f(0)^2\right)^2} \bigg(1536 f(0) \, \mathrm{D}(f)(0) \, \bigg($$

$$-\frac{1}{12} f(0) \, \mathrm{D}^{(4)}(f)(0) - \frac{1}{3} \mathrm{D}(f)(0) \, \mathrm{D}^{(3)}(f)(0) - \frac{1}{4} \mathrm{D}^{(2)}(f)(0)^2 \bigg) \bigg)$$

$$+ \frac{1}{\left(1-f(0)^2\right)^2} \bigg(768 \left(-f(0) \, \mathrm{D}^{(2)}(f)(0) - \mathrm{D}(f)(0)^2 \right) \left(-\frac{1}{3} f(0) \, \mathrm{D}^{(3)}(f)(0) \right.$$

$$\left. - \mathrm{D}(f)(0) \, \mathrm{D}^{(2)}(f)(0) \right) \bigg) \bigg) \bigg) f(0) \, \mathrm{D}(f)(0) \Bigg)$$

$$-\frac{35}{16}\,\frac{f(0)^3\,\mathrm{D}(f)\,(0)^3\left(-\dfrac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^4}$$

$$+\frac{105}{32}\,\frac{f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^4}$$

$$+\frac{7}{4096}\,\frac{1}{1-f(0)^2}\Bigg(\Bigg($$

$$-\frac{1280\,f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-\dfrac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^3}$$

$$+\frac{1280\,f(0)\,\mathrm{D}(f)\,(0)\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^3}+\frac{20}{3}\,\frac{1}{1-f(0)^2}\Bigg(\Bigg($$

$$-\frac{384\,f(0)\,\mathrm{D}(f)\,(0)\left(-\dfrac{1}{3}\,f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^2}$$

$$+\frac{96\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)^2}{\left(1-f(0)^2\right)^2}\Bigg)f(0)\,\mathrm{D}(f)\,(0)\Bigg)\Bigg)f(0)\,\mathrm{D}(f)\,(0)\Bigg)$$

$$-\frac{315}{16}\frac{f(0)^4\,\mathrm{D}(f)\,(0)^4\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)}{\left(1-f(0)^2\right)^5}$$

$$+\frac{231}{16}\frac{f(0)^6\,\mathrm{D}(f)\,(0)^6}{\left(1-f(0)^2\right)^6}\Bigg)\Bigg)+\frac{1}{54}\frac{1}{\sqrt{1-f(0)^2}}\Bigg(\mathrm{D}^{(4)}(f)\,(0)\Bigg($$

$$-\frac{1}{2}\frac{1}{1-f(0)^2}\left(-\frac{1}{60}f(0)\,\mathrm{D}^{(5)}(f)\,(0)-\frac{1}{12}\mathrm{D}(f)\,(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.$$

$$\left.-\frac{1}{6}\mathrm{D}^{(2)}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)\right)$$

$$-\frac{3}{2}\frac{1}{\left(1-f(0)^2\right)^2}\left(f(0)\,\mathrm{D}(f)\,(0)\left(-\frac{1}{12}f(0)\,\mathrm{D}^{(4)}(f)\,(0)\right.\right.$$

$$\left.\left.-\frac{1}{3}\mathrm{D}(f)\,(0)\,\mathrm{D}^{(3)}(f)\,(0)-\frac{1}{4}\mathrm{D}^{(2)}(f)\,(0)^2\right)\right)$$

$$+\frac{3}{4}\frac{1}{\left(1-f(0)^2\right)^2}\left(\left(-f(0)\,\mathrm{D}^{(2)}(f)\,(0)-\mathrm{D}(f)\,(0)^2\right)\left(-\frac{1}{3}f(0)\,\mathrm{D}^{(3)}(f)\,(0)\right.\right.$$

$$\left.\left.-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)\right)$$

$$-\frac{5}{4}\frac{f(0)^2\,\mathrm{D}(f)\,(0)^2\left(-\frac{1}{3}f(0)\,\mathrm{D}^{(3)}(f)\,(0)-\mathrm{D}(f)\,(0)\,\mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1-f(0)^2\right)^3}$$

$$+ \frac{5}{4} \frac{f(0)\, \mathrm{D}(f)\,(0)\, \left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^3} + \frac{5}{768} \frac{1}{1 - f(0)^2} \Bigg(\Bigg($$

$$- \frac{384\, f(0)\, \mathrm{D}(f)\,(0) \left(-\frac{1}{3} f(0)\, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1 - f(0)^2\right)^2}$$

$$+ \frac{96 \left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^2}\Bigg) f(0)\, \mathrm{D}(f)\,(0)\Bigg)$$

$$- \frac{35}{4} \frac{f(0)^3\, \mathrm{D}(f)\,(0)^3 \left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)}{\left(1 - f(0)^2\right)^4} + \frac{63}{8} \frac{f(0)^5\, \mathrm{D}(f)\,(0)^5}{\left(1 - f(0)^2\right)^5}\Bigg)\Bigg)$$

$$+ \frac{1}{216} \frac{1}{\sqrt{1 - f(0)^2}} \Bigg(\mathrm{D}^{(5)}(f)\,(0)\Bigg($$

$$- \frac{1}{2} \frac{-\frac{1}{12} f(0)\, \mathrm{D}^{(4)}(f)\,(0) - \frac{1}{3} \mathrm{D}(f)\,(0)\, \mathrm{D}^{(3)}(f)\,(0) - \frac{1}{4} \mathrm{D}^{(2)}(f)\,(0)^2}{1 - f(0)^2}$$

$$- \frac{3}{2} \frac{f(0)\, \mathrm{D}(f)\,(0) \left(-\frac{1}{3} f(0)\, \mathrm{D}^{(3)}(f)\,(0) - \mathrm{D}(f)\,(0)\, \mathrm{D}^{(2)}(f)\,(0)\right)}{\left(1 - f(0)^2\right)^2}$$

$$+ \frac{3}{8} \frac{\left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)^2}{\left(1 - f(0)^2\right)^2}$$

$$- \frac{15}{4} \frac{f(0)^2\, \mathrm{D}(f)\,(0)^2 \left(-f(0)\, \mathrm{D}^{(2)}(f)\,(0) - \mathrm{D}(f)\,(0)^2\right)}{\left(1 - f(0)^2\right)^3} + \frac{35}{8} \frac{f(0)^4\, \mathrm{D}(f)\,(0)^4}{\left(1 - f(0)^2\right)^4}\Bigg)\Bigg)$$

$$+ \frac{1}{1080} \; \frac{1}{\sqrt{1-f(0)^2}} \left(D^{(6)}(f)(0) \left(\right. \right.$$

$$- \frac{1}{2} \; \frac{-\frac{1}{3} f(0) \, D^{(3)}(f)(0) - D(f)(0) \, D^{(2)}(f)(0)}{1-f(0)^2}$$

$$\left. \left. - \frac{3}{2} \; \frac{f(0) \, D(f)(0) \left(-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2 \right)}{\left(1-f(0)^2\right)^2} + \frac{5}{2} \; \frac{f(0)^3 \, D(f)(0)^3}{\left(1-f(0)^2\right)^3} \right) \right)$$

$$+ \frac{1}{6480} \; \frac{1}{\sqrt{1-f(0)^2}} \left(D^{(7)}(f)(0) \left(-\frac{1}{2} \; \frac{-f(0) \, D^{(2)}(f)(0) - D(f)(0)^2}{1-f(0)^2} \right. \right.$$

$$\left. \left. + \frac{3}{2} \; \frac{f(0)^2 \, D(f)(0)^2}{\left(1-f(0)^2\right)^2} \right) \right) + \frac{1}{45360} \; \frac{D^{(8)}(f)(0) \, f(0) \, D(f)(0)}{\left(1-f(0)^2\right)^{3/2}}$$

$$\left. + \frac{1}{362880} \; \frac{D^{(9)}(f)(0)}{\sqrt{1-f(0)^2}} \right) x^9 + O\left(x^{10}\right)$$