ai as functions of a1

$$a_2(a_1) = \frac{1 + a_1^2}{4}$$

$$a_3(a_1) = \frac{2}{3} a_1\, a_2(a_1)$$

$$a_4(a_1) = \frac{36 a_1 a_3(a_1) + 16 (a_2(a_1))^2}{48}$$

$$a_5(a_1) = \frac{192 a_1 a_4(a_1) + 168 a_2(a_1) a_3(a_1)}{240}$$

$$a_6(a_1) = \frac{1200 a_1 a_5(a_1) + 1056 a_2(a_1) a_4(a_1) + 504 (a_3(a_1))^2}{1440}$$

$$a_7(a_1) = \frac{8640 a_1 a_6(a_1) + 7680 a_2(a_1) a_5(a_1) + 7200 a_3(a_1) a_4(a_1)}{10080}$$

$$a_8(a_1) = \frac{70560 a_1 a_7(a_1) + 63360 a_2(a_1) a_6(a_1) + 59040 a_3(a_1) a_5(a_1) + 28800 (a_4(a_1))^2}{80640}$$

$$a_9(a_1) = \frac{645120 a_1 a_8(a_1) + 584640 a_2(a_1) a_7(a_1) + 544320 a_3(a_1) a_6(a_1) + 524160 a_4(a_1) a_5(a_1) + 2620800 (a_5(a_1))^2}{725760}$$

$$a_{10}(a_1) = \frac{6531840 a_1 a_9(a_1) + 5967360 a_2(a_1) a_8(a_1) + 5564160 a_3(a_1) a_7(a_1) + 5322240 a_4(a_1) a_6(a_1) + 2620800 (a_5(a_1))^2}{7257600}$$

1 ai as functions of ai-1 to a1

$$a_2 = \frac{1 + a_1^2}{4}$$

$$a_3 = \frac{2}{3} a_1 a_2$$

$$a_4 = \frac{36 a_1 a_3 + 16 a_2^2}{48}$$

$$a_5 = \frac{192 a_1 a_4 + 168 a_2 a_3}{240}$$

$$a_6 = \frac{1200 a_1 a_5 + 1056 a_2 a_4 + 504 a_3^2}{1440}$$

$$a_7 = \frac{8640 a_1 a_6 + 7680 a_2 a_5 + 7200 a_3 a_4}{10080}$$

$$a_8 = \frac{70560 a_1 a_7 + 63360 a_2 a_6 + 59040 a_3 a_5 + 28800 a_4^2}{80640}$$

$$a_9 = \frac{645120 a_1 a_8 + 584640 a_2 a_7 + 544320 a_3 a_6 + 524160 a_4 a_5 + 2620800 a_5^2}{725760}$$

$$a_{10} = \frac{6531840 a_1 a_9 + 5967360 a_2 a_8 + 5564160 a_3 a_7 + 5322240 a_4 a_6 + 2620800 a_5^2}{7257600}$$

$$a_{11} = \frac{72576000 a_1 a_{10} + 66769920 a_2 a_9 + 62415360 a_3 a_8 + 59512320 a_4 a_7 + 58060800 a_5 a_6}{79833600}$$