

⑨

$$a_6 = -\frac{a_4(1)(3)}{6 \cdot 5} = -\frac{a_4}{10} = -\frac{1}{10} \cdot \left(-\frac{1}{8}\right) a_0 = \frac{1}{80} a_0$$

$$a_8 = -\frac{a_6(3)(5)}{8 \cdot 7} = -\frac{15}{56} \cdot a_6 = -\frac{15}{56} \cdot \frac{a_0}{80} = \frac{-3a_0}{56 \cdot 16}$$

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∴ Gen. solution is

$$y = a_0 \left\{ 1 - \frac{3}{2}x^2 - \frac{1}{8}x^4 + \frac{x^6}{80} - \frac{3x^8}{56 \cdot 16} + \dots \right\} + a_1 x$$

(6 non zero terms!)

$$I.C.'s \Rightarrow a_0 = 2, a_1 = -2$$

$$\Rightarrow y = 2 - 3x^2 - \frac{1}{4}x^4 + \frac{x^6}{40} - \frac{3x^8}{56 \cdot 8} + \dots - 2x$$

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