**eqn = ** $\omega_0 + h\,(c[2]\,\omega_1 + c[1]\,\omega_{10}) + \frac{1}{2} h^2 \left(c[2]^2\,\omega_2 + 2\,c[1]\,c[2]\,\omega_{11} + c[1]^2\,\omega_{20}\right) + \frac{1}{6} h^3 \left(c[2]^3\,\omega_3 + 3\,c[1]\,c[2]^2\,\omega_{12} + 3\,c[1]^2\,c[2]\,\omega_{21} + c[1]^3\,\omega_{30}\right) == \omega_0 + h\,(c[1]\,\omega_1 + c[2]\,\omega_{10}) + \frac{1}{2} h^2 \left(c[1]^2\,\omega_2 + 2\,c[1]\,c[2]\,\omega_{11} + c[2]^2\,\omega_{20}\right) + \frac{1}{6} h^3 \left(c[1]^3\,\omega_3 + 3\,c[1]^2\,c[2]\,\omega_{12} + 3\,c[1]\,c[2]^2\,\omega_{21} + c[2]^3\,\omega_{30}\right)$

$$\omega_0 + h\,(c[2]\,\omega_1 + c[1]\,\omega_{10}) + \frac{1}{2} h^2 \left(c[2]^2\,\omega_2 + 2\,c[1]\,c[2]\,\omega_{11} + c[1]^2\,\omega_{20}\right) + \frac{1}{6} h^3 \left(c[2]^3\,\omega_3 + 3\,c[1]\,c[2]^2\,\omega_{12} + 3\,c[1]^2\,c[2]\,\omega_{21} + c[1]^3\,\omega_{30}\right) == \omega_0 + h\,(c[1]\,\omega_1 + c[2]\,\omega_{10}) + \frac{1}{2} h^2 \left(c[1]^2\,\omega_2 + 2\,c[1]\,c[2]\,\omega_{11} + c[2]^2\,\omega_{20}\right) + \frac{1}{6} h^3 \left(c[1]^3\,\omega_3 + 3\,c[1]^2\,c[2]\,\omega_{12} + 3\,c[1]\,c[2]^2\,\omega_{21} + c[2]^3\,\omega_{30}\right)$$

Simplify[eqn]

$$h\,(c[1] - c[2]) \left(6\,\omega_1 + 3\,h\,(c[1] + c[2])\,\omega_2 + h^2\,c[1]^2\,\omega_3 + h^2\,c[1]\,c[2]\,\omega_3 + h^2\,c[2]^2\,\omega_3 - 6\,\omega_{10} + 3\,h^2\,c[1]\,c[2]\,\omega_{12} - 3\,h\,c[1]\,\omega_{20} - 3\,h\,c[2]\,\omega_{20} - 3\,h^2\,c[1]\,c[2]\,\omega_{21} - h^2\,c[1]^2\,\omega_{30} - h^2\,c[1]\,c[2]\,\omega_{30} - h^2\,c[2]^2\,\omega_{30}\right) == 0$$

SolveAlways[eqn, {c[1], c[2], h}]

$$\{\{\omega_1 \to \omega_{10},\ \omega_2 \to \omega_{20},\ \omega_{12} \to \omega_{21},\ \omega_3 \to \omega_{30}\}\}$$

z + (x == y)

$$z + (x == y)$$

Series[f[x] == g[x], {x, 0, 3}]

$$f[0] + f'[0]\,x + \frac{1}{2} f''[0]\,x^2 + \frac{1}{6} f^{(3)}[0]\,x^3 + O[x]^4 == g[0] + g'[0]\,x + \frac{1}{2} g''[0]\,x^2 + \frac{1}{6} g^{(3)}[0]\,x^3 + O[x]^4$$