

(22)

$$y'' = 2 + 6xc_3 = 0$$

$$y''(1) = 2 + 6c_3 = -4$$

$$6c_3 = -6, c_3 = -1$$

$$c_2 + 3c_3 = -3$$

$$c_2 - 3 = -3, c_2 = 0$$

$$c_1 = -c_2 - c_3 = 1.$$

The solution is

$$y = x^2 + 1 + 0x - x^3 = 1 + x^2 - x^3.$$