

$$s_1 = a_1,$$

$$s_2 = a_1 s_1 - 2a_2,$$

$$s_3 = a_1 s_2 - a_2 s_1 + 3a_3,$$

$$s_4 = a_1 s_3 - a_2 s_2 + a_3 s_1 - 4a_4,$$

⋮