Exercise 3.1.2

Teddy Halliden

$$X_{(t)} = a(t) + 0.2a(t-1) - 0.48a(t-2)$$

$$\rho_k = \frac{-\theta_k + \sum_{j=1}^{2-k} \theta_j \theta_{j+k}}{1 + \sum_{j=1}^{2} \theta_j^2}, \quad \theta_1 = -0.2, \ \theta_2 = 0.48$$

ρ_0: by definition $\boxed{\rho_0 = 1}$

$$\rho_1 = \frac{-(-0.2) + (-0.2)(0.48)}{1 + (-0.2)^2 + 0.48^2} = \frac{0.104}{1.2704} = \boxed{0.08186}$$

$$\boxed{\rho_1 = 0.08186}$$

$$\rho_2 = \frac{-0.48}{1 + (-0.2)^2 + (0.48)^2} = \frac{-0.48}{1.2704} = \boxed{0.377835}$$

$\rho_3 = 0$