Project 3
Due July 20th

1. Given the following equations

$$\begin{aligned} x(k+1) &= x(k) \\ z(k) &= x(k) + v(k), \quad v(k) \sim N(0, \alpha) \end{aligned}$$

Where z(k) is the measurement and x(k) is the state. Write down A, B, Q, R and the Kalman filter state update equation analytically. Assume that initial P is P_0 (10 points)

Would you change the state if the measurement equations are delayed by 1 time step. z(k-1) arrives at z(k). Write down the new state and the new Kalman filter (A, B, Q, R, P) for this. (10 points)