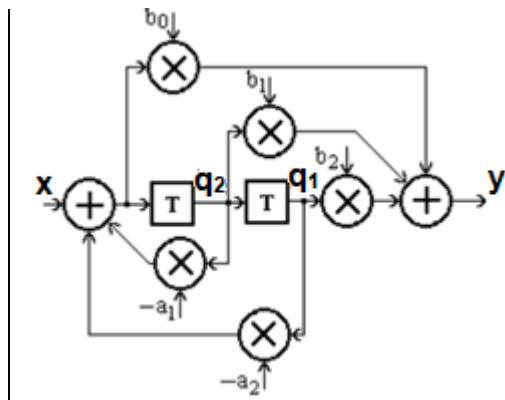


**EE 311**

**State Variable Exercise.**

A) Write the state variable equations in  $z$  for the second order system shown.



B) Find the  $\bar{A}$ ,  $\bar{B}$ ,  $\bar{C}$ , and  $\bar{D}$  matrices for the system.

C) Write the implementation equations in C-code for this system.

D) Write the C-code for two such sections in series where the coefficients are  $a_{sx}$  and  $b_{sx}$  where  $s$  is the section number.