ECE 343 - Homework #24

s to z conversion - Summer 2018

s to z conversion

Find the transfer function, G(z), which has approximately the same impulse response as G(s).

1) $G(s) = \left(\dfrac{10}{(s+1)(s+2)} \right)$ T = 0.1 second

2) $G(s) = \left(\dfrac{10}{(s+1)(s+2)} \right)$ T = 0.01 second

3) $G(s) = \left(\dfrac{10(s+3)}{s^2+2s+10} \right)$ T = 0.1 second

z to s conversion

Find the transfer function, G(s), which has approximately the same impulse response as G(z).

4) $G(z) = \left(\dfrac{0.1(z-0.98)}{(z-0.9)} \right)$ T = 0.1 second

5) $G(z) = \left(\dfrac{0.1(z-0.98)}{(z-0.9)} \right)$ T = 0.01 second

6) $G(z) = \left(\dfrac{0.1z^3}{(z-0.9)(z-0.8)(z-0.7)} \right)$ T = 0.01 second

7) $G(z) = \left(\dfrac{0.1(z^2-1.791z+0.81)}{(z-0.9)(z^2-1.8621z+0.9025)} \right)$ T = 0.01 second