Quizz: Chapter 2

Laplace transform

Using the Laplace transform table that can be found in the lecture slides (page 5), find the frequential domain function of the following time domain function

1. $f(t) = t^7 u(t)$

2. $\dfrac{dc(t)}{dt} + 2c(t) = r(t)$

3. $\dfrac{d^3 c(t)}{dt^3} + 3\dfrac{d^2 c(t)}{dt^2} + 7\dfrac{dc(t)}{dt} + 5c(t) = \dfrac{dr^2(t)}{dt^2} + 4\dfrac{dr(t)}{dt} + 3r(t)$

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Inverse Laplace transform

Using the Laplace transform table that can be found in the lecture slides (page 5), find the time domain function of the following frequential domain function (assume zero initial condition)

1. $s^3 F(s)$

2. $G(s) = \dfrac{2s+1}{s^2 + 6s + 2} = \dfrac{C(s)}{R(s)}$

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