EE202 Homework 5

(1) Find the inverse Laplace transform of each of the following functions:

(a) $F(s) = \dfrac{K}{s+a}$

(b) $F(s) = \dfrac{K}{(s+a)^2}$

(c) $F(s) = \dfrac{K}{s+\alpha - j\beta} + \dfrac{K^*}{s+\alpha + j\beta}$

(d) $F(s) = \dfrac{K}{(s+\alpha - j\beta)^2} + \dfrac{K^*}{(s+\alpha + j\beta)^2}$

where K, α and β are constants. α and β are real.

(2) Find f(t) for each of the following functions:

(a) $F(s) = \dfrac{18s^2 + 66s + 54}{(s+1)(s+2)(s+3)}$

(b) $F(s) = \dfrac{1}{s(s^2 + 8s + 15)}$

(c) $F(s) = \dfrac{10(3s^2 + 4s + 4)}{s(s+2)^2}$

(d) $F(s) = \dfrac{s^3 - 6s^2 + 15s + 50}{s^2(s^2 + 4s + 5)}$