

Student's name:

Student's ID:

PRINCIPLES OF EE2

Spring 2020

Homework #3

Deadline: 27/03/2020

NOTE:

- While doing your homework, explain your work in detail
- Submit the homework via Blackboard, the name of the PDF file should follow the format: **HovaTen_MSSSV_HW#3**.
- You can do your HW either by **typing equation in Word** or **hand written papers**. Then, **before submitting, convert them into PDF format** so that your work arrangement will remain the same the way you represent it.
- **Hand written works** should **not be captured by camera only**, as it will be hard for me to see your work if the image quality is low. Using CamScanner App on mobile phone to scan your Paper is recommended if you do not possess scanner machine.
- Any **late submission** will be **subtracted by 20% per day**. Copying your classmate homework is prohibited. If caught with evidences, violation cases will result in 0 in the marks from both parties, respectively.

Problem 1 (25 marks): Find the inverse Laplace transform of the following function

a) $F(s) = \frac{24s^2 + 88s + 72}{s^3 + 6s^2 + 11s + 6}$

b) $F(s) = \frac{8s^2 + 37s + 32}{s^3 + 7s^2 + 14s + 8}$

Problem 2 (25 marks): Find the inverse Laplace transform of the following function:

a) $F(s) = \frac{5s^2 + 38s + 80}{s^2 + 10s + 24}$

b) $F(s) = \frac{10s^2 + 512s + 7186}{s^2 + 48s + 625}$

Problem 3 (25 marks): Find the inverse Laplace transform of the following function:

$$F(s) = \frac{100(s+1)}{s^2(s^2+2s+5)}$$

Problem 4 (25 marks): Find the initial and final values of the function whose Laplace transform is:

$$F(s) = \frac{20}{(s+3)(s^2+8s+25)}$$