Classwork 08 UAH, CPE381, FA24 09/18/2024

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Total: 10pts.

Q1. Find the Laplace transform of ramp signal $r(t)$ from the first principle. Also, state ROC. (5pts)

Hints: use integration by parts

$$\int u\,dv = uv - \int v\,du$$

Q2. Given that $x(t) = e^{at}u(t)$ has Laplace transform $X(s) = \frac{1}{s-a}$

Find the Laplace transform of $y(t) = \sin(at)u(t)$

State ROC. (5pts.)

[Hint: Use Euler's Identity. Don't need to use the first principle]