

Worksheet 04/20

Today is an introduction to the **Laplace Transform**. Today we will simply focus on the mechanics of the transform and on Wednesday we will see how the transform can be used to solve ODEs.

To do List

1. Watch the videos on the introduction to Laplace transforms and examples and make detailed notes as you go.
2. Attempt the problems below to check your understanding.

NOTE: I will not collect the worksheet problems. These problems are meant to check your understanding and generate questions to ask me during office hours if you get stuck.

Objectives

By the end of this lecture you should be able to

1. Calculate the Laplace Transform of a function $f(t)$.

Problems

1. Use the results from the lecture to find the Laplace transform of
 - (a) $7e^{2t}$
 - (b) $2 + 6e^{-4t}$
2. Find the Laplace transform of each of the following using the definition

(a) te^{at}

(b) $f(t) = \begin{cases} t, & 0 \leq t < 1 \\ 1, & 1 \leq t < \infty \end{cases}$

Reading

Section 6.1.