*Laplace Transformer

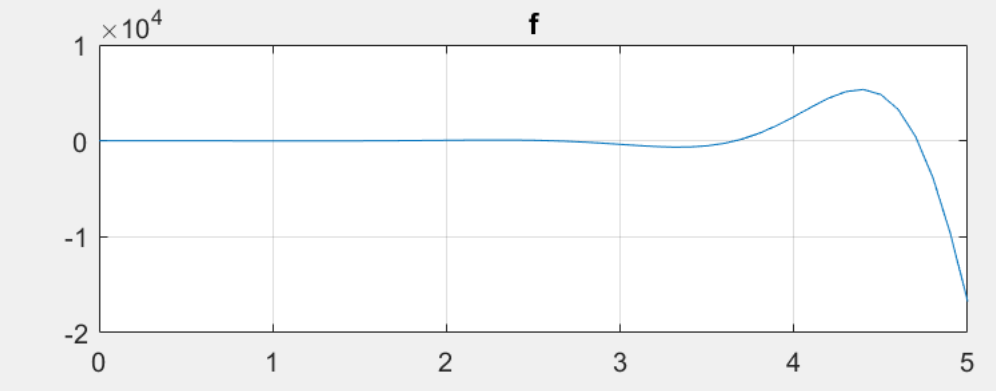
📖 Introduction

The Laplace Transform is a mathematical tool used to analyze and solve linear time-invariant systems. It converts functions from the time domain into the complex frequency domain, making it easier to handle differential equations and system behavior. This transform is widely used in engineering, control systems, and signal processing because it simplifies calculations and helps predict system responses.

***EX{1}:**
Find the Laplace Transform of the function:

F(t)=e^2t cos3t

```
close all
clear all
clc
syms t s
f = exp(2*t)*cos(3*t);
F = laplace(f);
pretty(F)
g = matlabFunction(f);
x = 0:0.1:5;
subplot(2,1,1)
plot(x, g(x))
title('f')
grid on
```

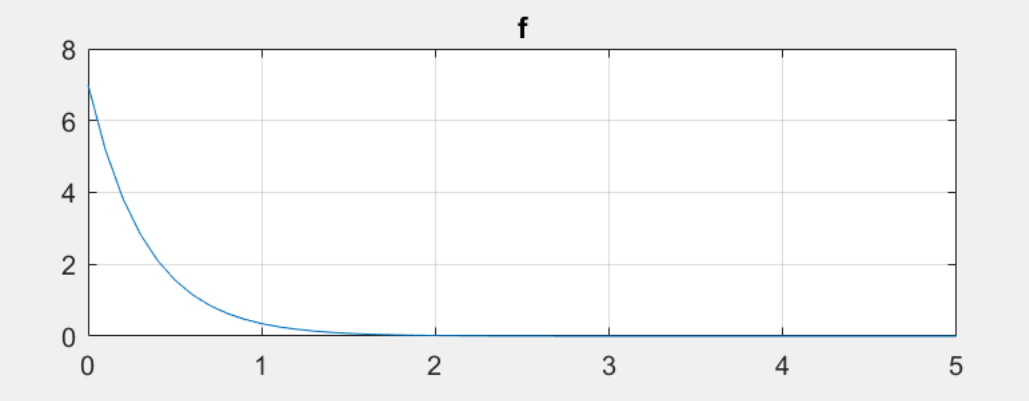


*EX{2}

Find the Laplace Transform of the function:

F(t)=7e^-3t

```
close all
clear all
clc
syms t s
f = 7*exp(-3*t);
F = laplace(f);
pretty(F)
g = matlabFunction(f);
x = 0:0.1:5;
subplot(2,1,1)
plot(x, g(x))
title('f')
grid on
```



Discussion:

Q Find the Laplace Transform of the function:

1)e^{-t} t cos2t

2)e^{2t}cos3t