**Frequency Domain Modelling in MATLAB**

**LAB # 06**



**Fall 2024**

**CSE-310L Control Systems Lab**

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Registration No.: **21PWCSE2059**

Class Section: **C**

“On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work.”

Submitted to:

**Dr. Muniba Ashfaq**

Date:

1**st December 2024**

**Department of Computer Systems Engineering**

**University of Engineering and Technology, Peshawar**

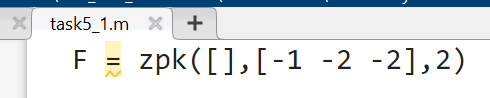
**Objectives:**

The objective of this lab is to learn about:

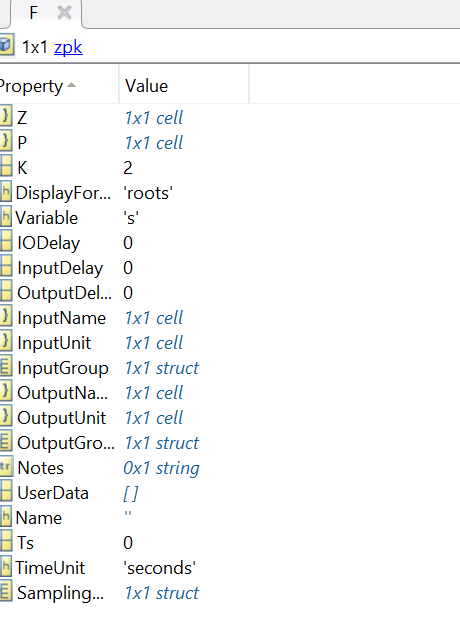
* finding the Laplace and Inverse Laplace transforms using MATLAB

**5.1 Use the MATLAB and Control System Toolbox to form a linear time invariant system transfer function**

**Code:**

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**Output:**

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**5.2 Use the MATLAB to get the equation**

**Task 8:**

**Code:**

**A screenshot of a computer

Description automatically generated**

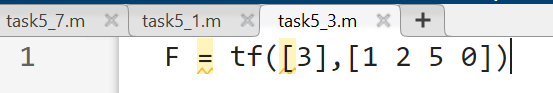
**Output:**

**A white paper with black text

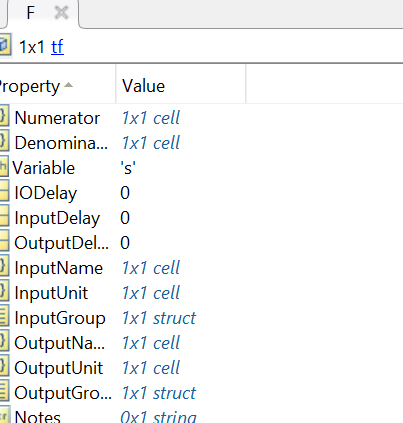
Description automatically generated**

**5.3 Use the MATLAB and Control System Toolbox to form a linear time invariant system transfer function**

**Code:**

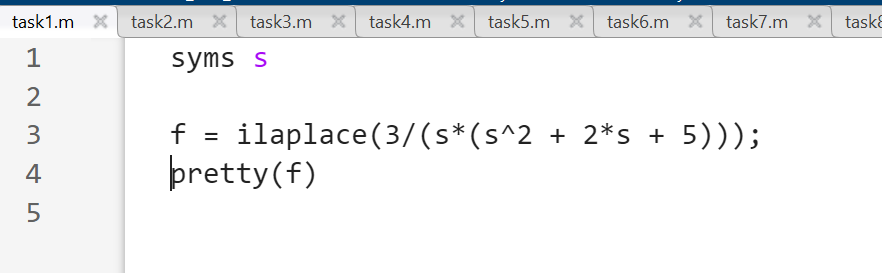
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**Output:**

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**5.4 Use the MATLAB to find the inverse laplace transform of the system transfer function**

**Code:**

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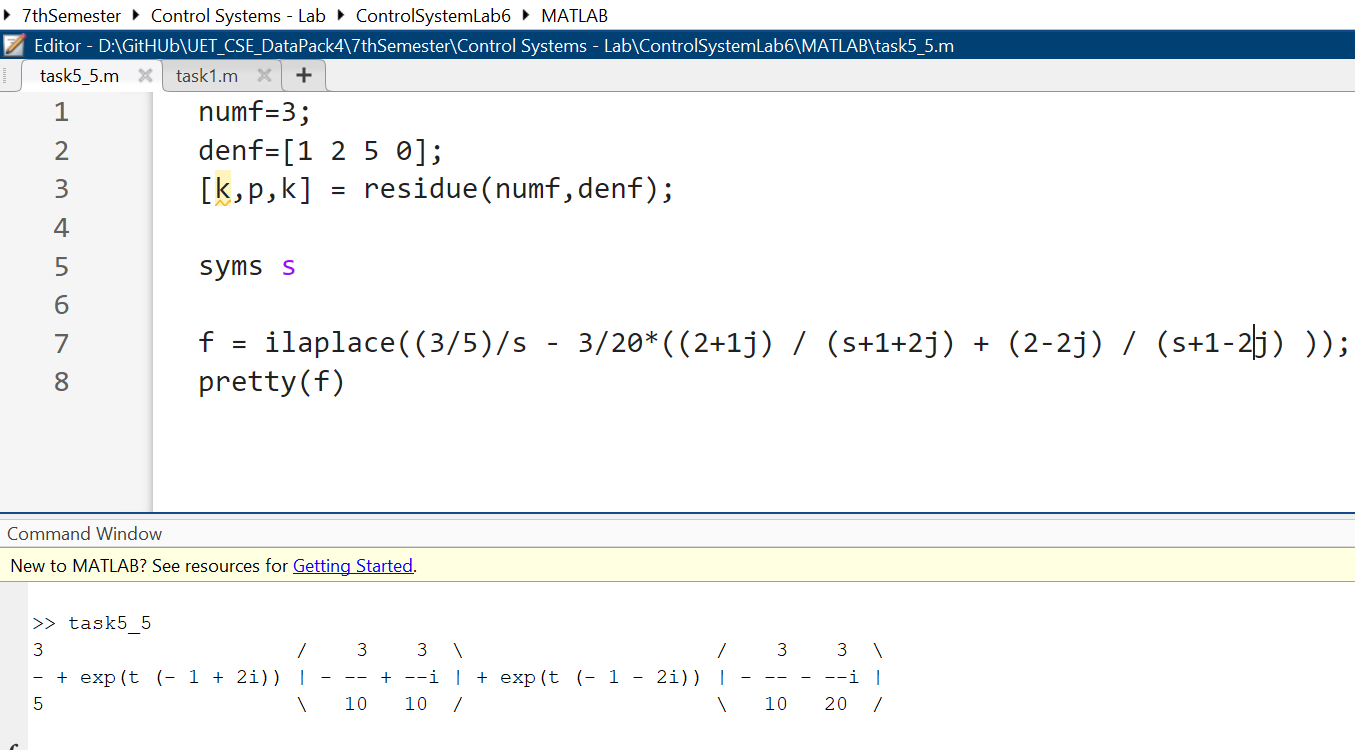
**Output:**

**A math equations and numbers

Description automatically generated with medium confidence**

**5.5 Use MATLAB to get the following equation**

**Code:**

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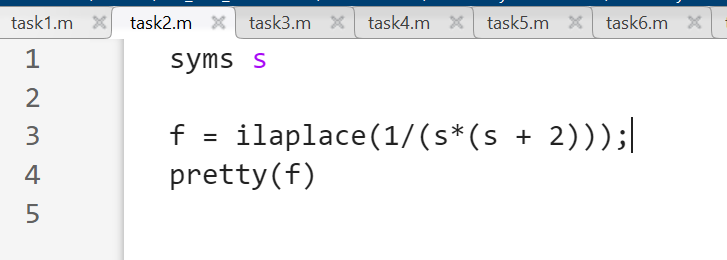
**Output:**

**A screenshot of a computer

Description automatically generated**

**5.6 Use the MATLAB to find the inverse laplace transform of the system transfer function**

**Code:**

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**Output:**

**A white background with black text

Description automatically generated**

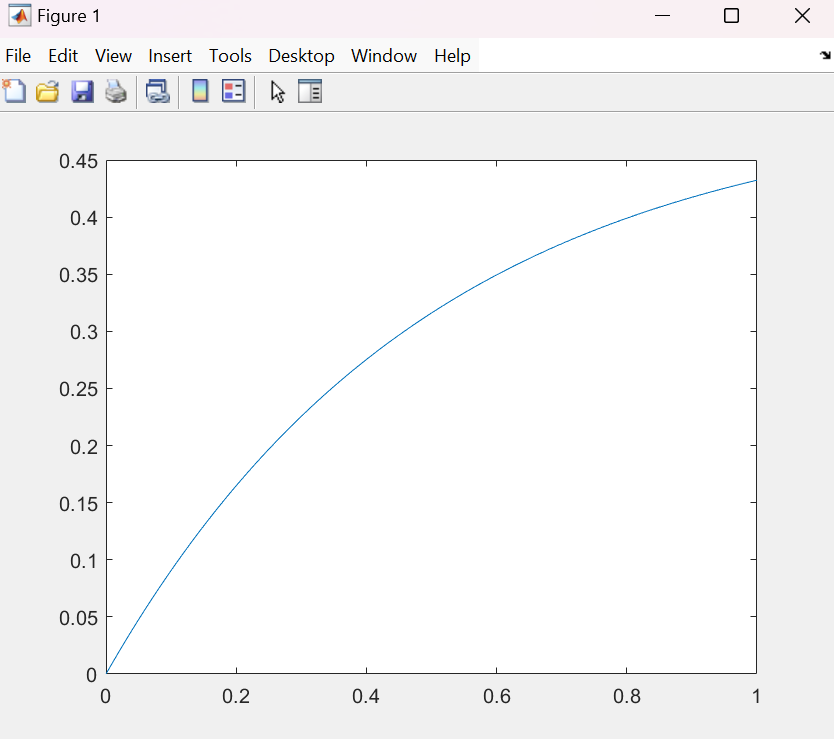
**5.7 Use MATLAB to plot the following function for t from 0 to 1 with the intervals of 0.01**

**Code:**

**A screenshot of a computer

Description automatically generated**

**Output:**

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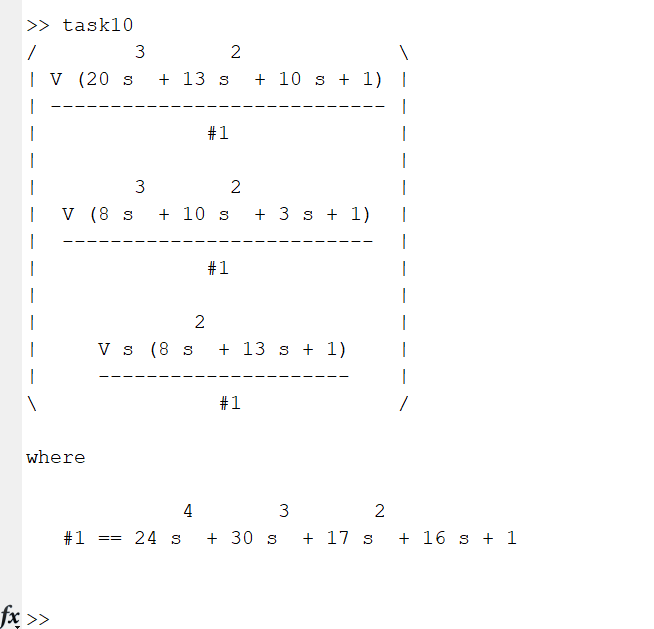
**5.8 Use MATLAB and Symbolic Math Toolbox to help you solve the following equation for currents.**

**Code:**

**A screenshot of a computer

Description automatically generated**

**Output:**

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**Lab Tasks:**

**Task 1:**

**Code:**

**A screenshot of a computer

Description automatically generated**

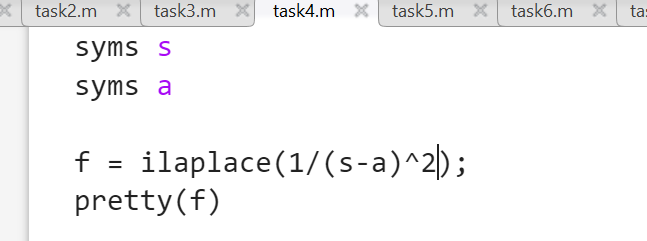
**Output:**

**A number on a white background

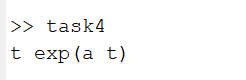
Description automatically generated**

**Task 2:**

**Code:**

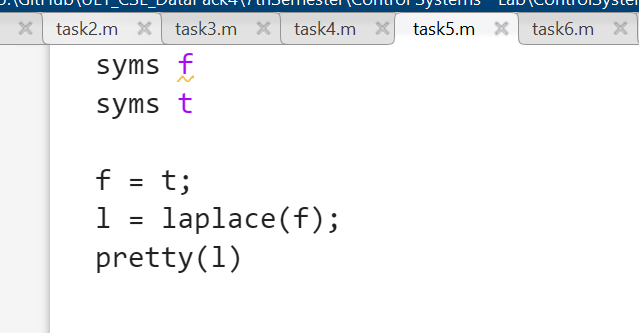
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**Output:**

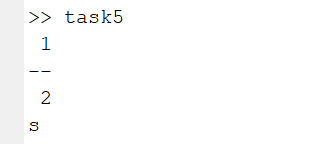
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**Task 3:**

**Code:**

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**Output:**

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**Task 4:**

**Code:**

**A screenshot of a computer

Description automatically generated**

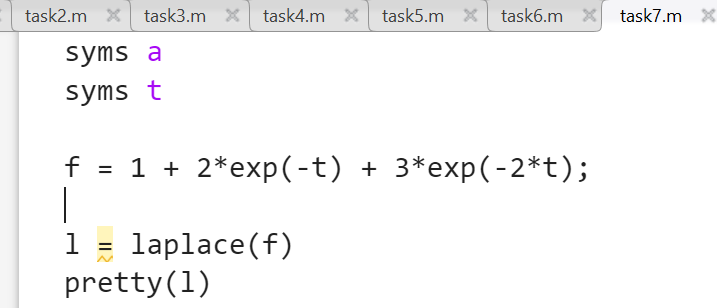
**Output:**

**A white background with black and white clouds

Description automatically generated**

**Task 5:**

**Code:**

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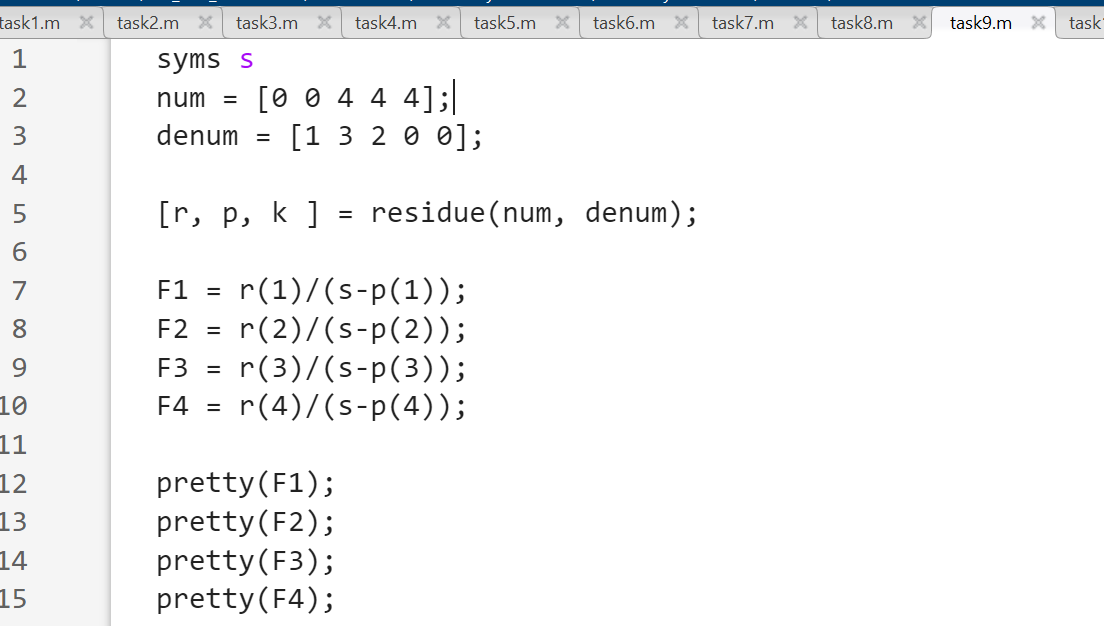
**Output:**

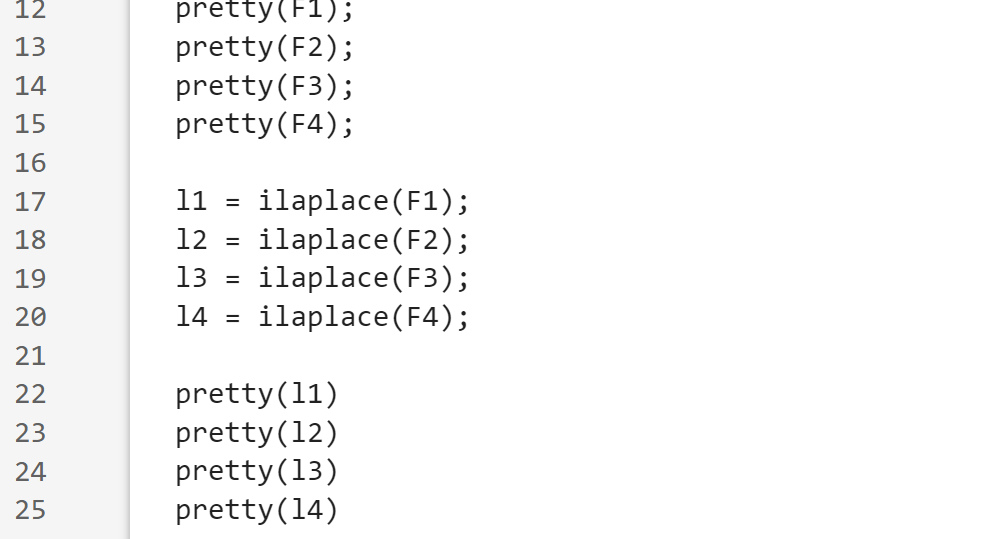
**A screenshot of a computer

Description automatically generated**

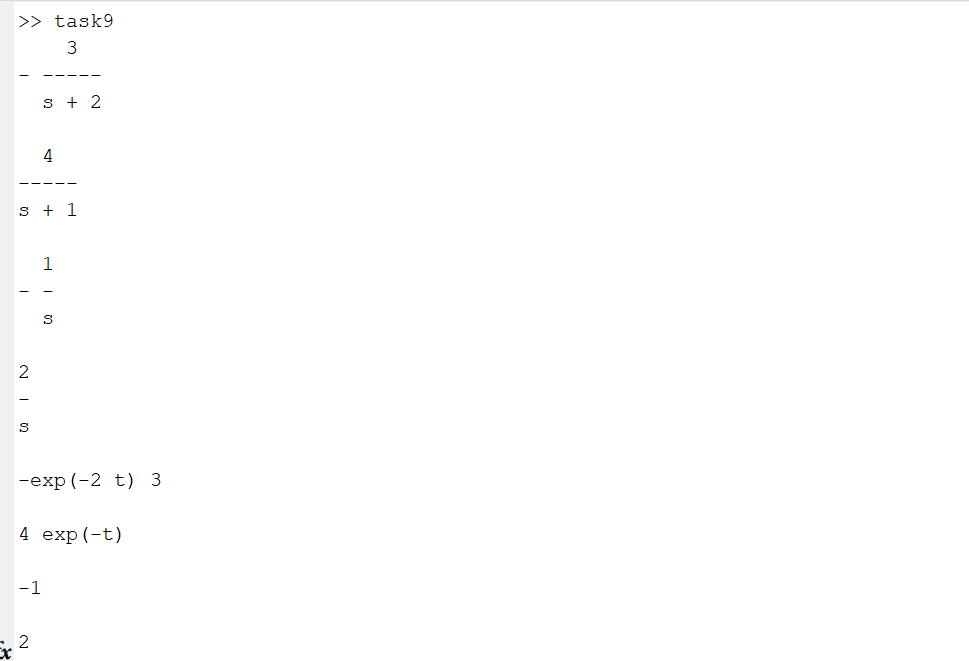
**Task 6:**

**Code:**

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**Output:**

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