

Prelaboratory Exercise 2

Objectives

In this Prelab, you will familiarize yourself with the characteristics of first order systems.

Assignment

The transfer function of a first order differential equation with zero initial conditions can be written as:

$$H(s) = \frac{Y(s)}{U(s)} = \frac{K}{\tau s + 1}$$

1. Let $u(t)$ be a unit step input. Find $y(t)$ by taking the Inverse Laplace Transform of your transfer function. Sketch $y(t)$ and label τ , 2τ , and K on the figure.