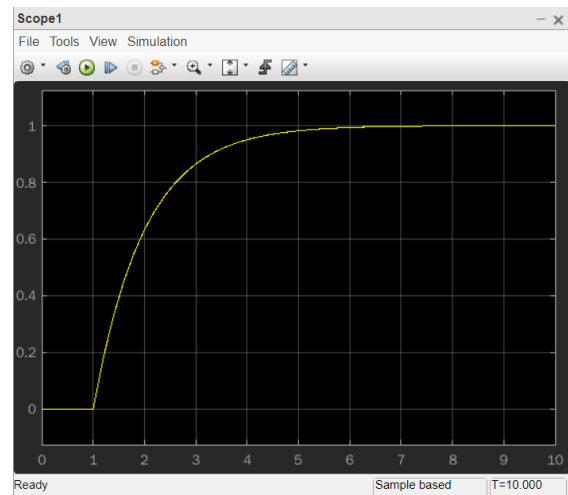
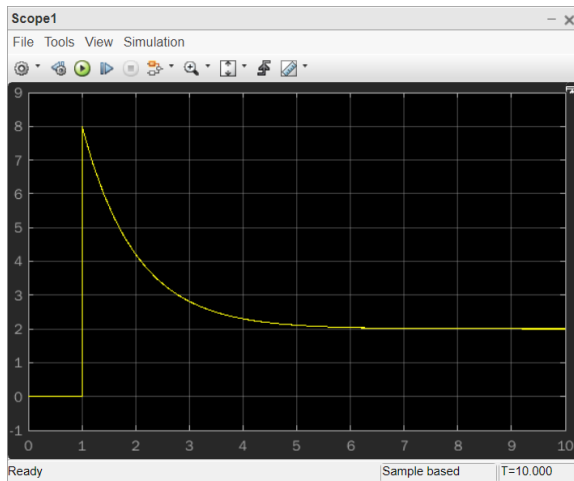
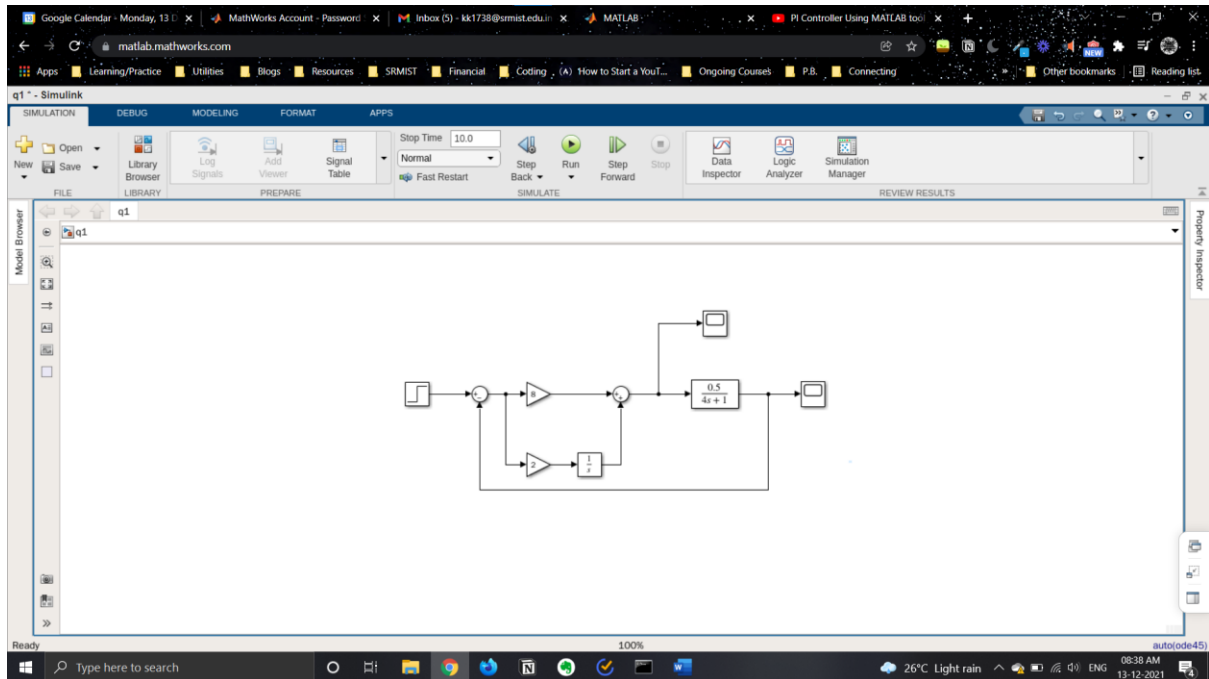


## Control Systems Portfolio Assignment

RA2011004010051

Kunal Keshan ECE A

Q. Design a system Transfer function  $G(S)$  = Using MATLAB. Observe its response for step input and control the response using Integral Controller.



Q. Reduce the block diagram using MATLAB functions.



```

1 clc;
2 close all;
3 clear;
4 p = 4;
5 q = [1 1 2];
6 a = tf(p,q);
7 r = [1 0];
8 s = [1 2];
9 b = tf(r,s);
10
11 c = series(a,b);
12
13 Ans = feedback(c, -1)

```

Workspace:

Name	Value	Size	Class
a	$\frac{4}{s^3 + 3s^2 + 8s + 4}$	1x1	tf
Ans	$\frac{4}{s^3 + 3s^2 + 8s + 4}$	1x1	tf
b	$\frac{1}{s^2 + 2s + 1}$	1x1	tf
c	$\frac{4}{s^3 + 3s^2 + 8s + 4}$	1x1	tf
p	4	1x1	double
q	[1, 1, 2]	1x3	double
r	[1, 0]	1x2	double
s	[1, 2]	1x2	double

Command Window:

```

Continuous-time transfer function.

Ans =

      4 s
-----
s^3 + 3 s^2 + 8 s + 4

Continuous-time transfer function.

>>

```

$p =$   
 $4$   
 $q =$   
 $\begin{bmatrix} 1 & 1 & 2 \end{bmatrix}$   
 $a =$   
 $\frac{4}{s^2 + s + 2}$   
 Continuous-time transfer function.

$r =$   
 $\begin{bmatrix} 1 & 0 \end{bmatrix}$   
 $s =$   
 $\begin{bmatrix} 1 & 2 \end{bmatrix}$   
 $b =$   
 $\frac{s}{s + 2}$   
 Continuous-time transfer function.

Continuous-time transfer function.  
 $c =$   
 $\frac{4 s}{s^3 + 3 s^2 + 8 s + 4}$   
 Continuous-time transfer function.  
 $Ans =$   
 $\frac{4 s}{s^3 + 3 s^2 + 8 s + 4}$   
 Continuous-time transfer function.