

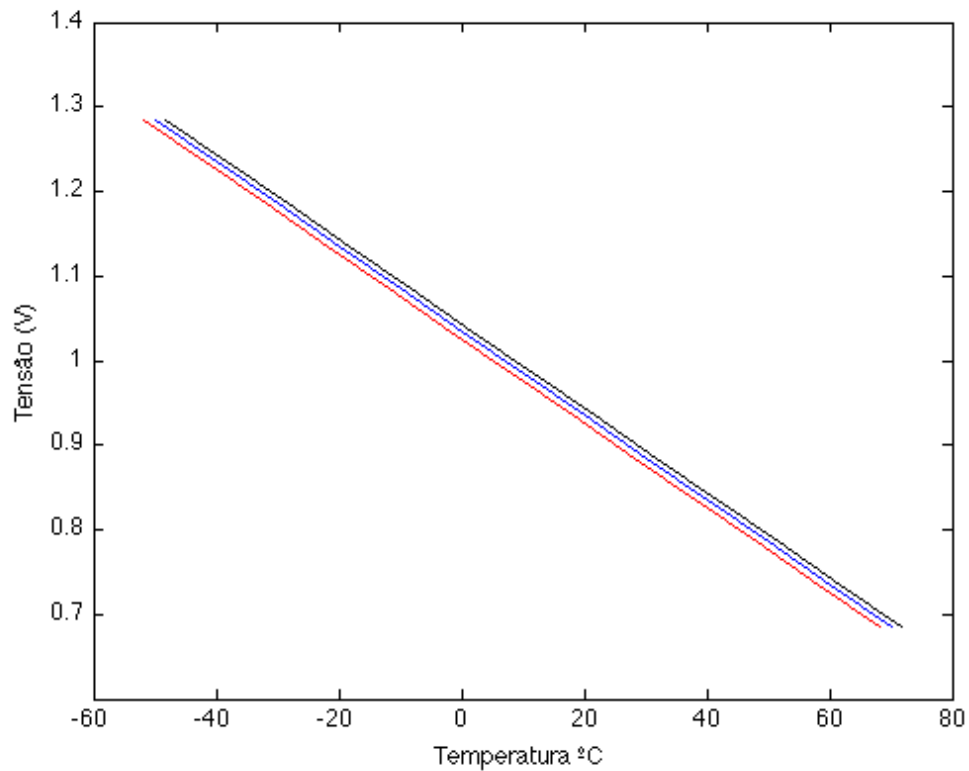
# LABORATÓRIO DE ANÁLISE DINÂMICA LINEAR

## RELATÓRIO DO EXPERIMENTO 1- MATLAB

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### Tarefas da Apresentação

```
T= -50:10:70;  
v= -0.005*T+1.035;  
plot(T,v);  
hold on  
plot(T+1.8,v,'black');  
hold on  
plot(T-1.8,v,'red');  
xlabel ('Temperatura °C');  
ylabel ('Tensão [V]');
```

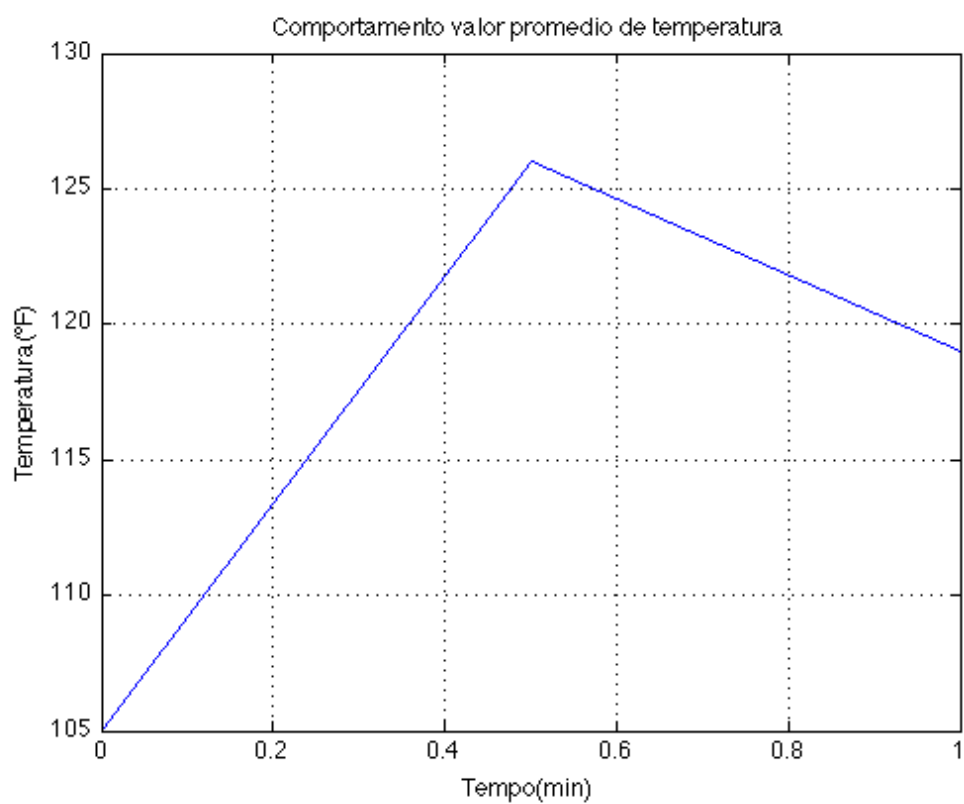


```
temperatura=[105 126 119];
```

```

tempo = [0 0.5 1];
promedio=mean(temperatura);
plot(tempo,temp);
title ('Comportamento valor promedio de
temperatura');
xlabel('Tempo(min) ');
ylabel('Temperatura(°F) ');
grid;

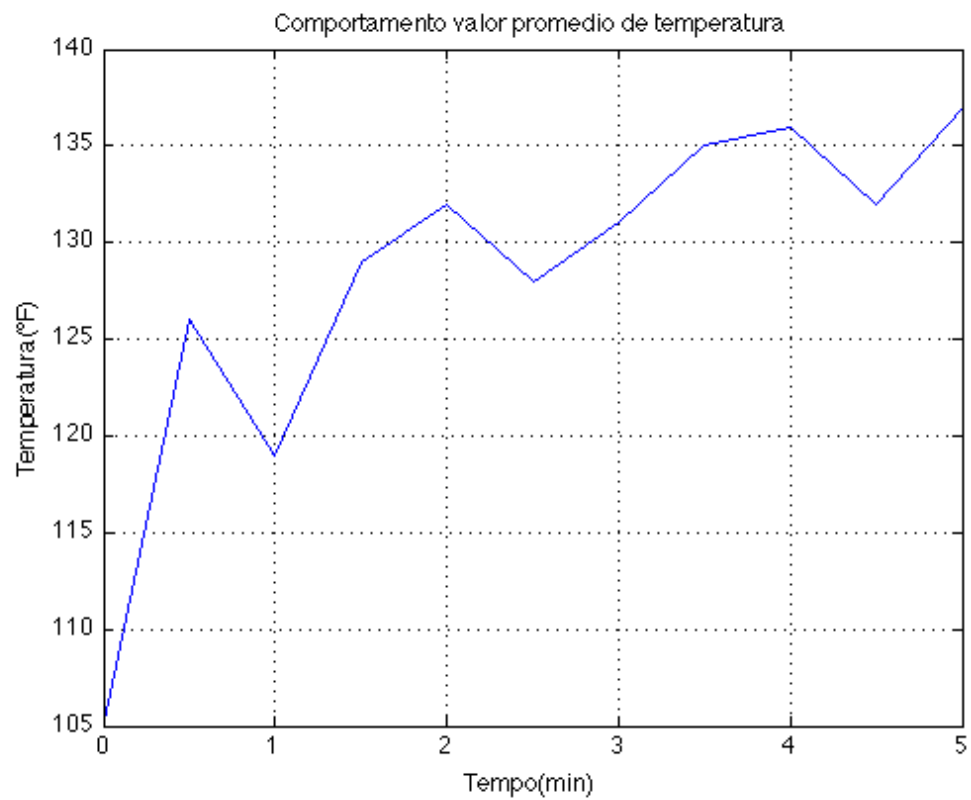
```



```

temperatura=[105 126 119 129 132 128 131 135 136 132
137];
tempo = [0 .5 1 1.5 2 2.5 3 3.5 4 4.5 5];
promedio=mean(temperatura);
plot(tempo,temperatura);
title ('Comportamento valor promedio de
temperatura');
xlabel('Tempo(min) ');
ylabel('Temperatura (°F) ');
grid;

```



### Exercício - Apresentação

```
A=[ 1 1 2;
    2 4 -3;
    3 6 -5]
```

```
B=[ 9; 1; 0]
```

```
X= inv(A) *B
```

```
A =
```

```
1      1      2
2      4     -3
3      6     -5
```

B =

9

1

0

X =

1.0000

2.0000

3.0000

### **Questões Extras**

No código abaixo contém todas as instruções para a execução do guide das questões requisitadas.

```
function varargout = expl(varargin)
% EXP1 M-file for expl.fig
%     EXP1, by itself, creates a new EXP1 or raises the
existing
%     singleton*.
%
%     H = EXP1 returns the handle to a new EXP1 or the
handle to
%     the existing singleton*.
%
%     EXP1('CALLBACK',hObject,eventData,handles,...)
calls the local
%     function named CALLBACK in EXP1.M with the given
input arguments.
%
%     EXP1('Property','Value',...) creates a new EXP1 or
raises the
%     existing singleton*. Starting from the left,
property value pairs are
%     applied to the GUI before expl_OpeningFcn gets
called. An
%     unrecognized property name or invalid value makes
property application
%     stop. All inputs are passed to expl_OpeningFcn
via varargin.
```

```

%
%      *See GUI Options on GUIDE's Tools menu. Choose
"GUI allows only one
%      instance to run (singleton)".
%
% See also: GUIDE, GUIDATA, GUIHANDLES

% Edit the above text to modify the response to help expl

% Last Modified by GUIDE v2.5 10-Dec-2010 12:05:01

% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
    'gui_Singleton',  gui_Singleton, ...
    'gui_OpeningFcn', @expl_OpeningFcn, ...
    'gui_OutputFcn',  @expl_OutputFcn, ...
    'gui_LayoutFcn',  [] , ...
    'gui_Callback',   []);
if nargin && ischar(varargin{1})
    gui_State.gui_Callback = str2func(varargin{1});
end

if nargin
    [varargout{1:nargout}] = gui_mainfcn(gui_State,
varargin{:});
else
    gui_mainfcn(gui_State, varargin{:});
end
% End initialization code - DO NOT EDIT

% --- Executes just before expl is made visible.
function expl_OpeningFcn(hObject, eventdata, handles,
varargin)
% This function has no output args, see OutputFcn.
% hObject      handle to figure
% eventdata    reserved - to be defined in a future version
of MATLAB
% handles      structure with handles and user data (see
GUIDATA)
% varargin     command line arguments to expl (see
VARARGIN)

% Choose default command line output for expl
handles.output = hObject;

% Update handles structure

```

```

guidata(hObject, handles);

% UIWAIT makes expl wait for user response (see UIRESUME)
% uiwait(handles.figure1);

% --- Outputs from this function are returned to the
command line.
function varargout = expl_OutputFcn(hObject, eventdata,
handles)
% varargout    cell array for returning output args (see
VARARGOUT);
% hObject      handle to figure
% eventdata    reserved - to be defined in a future version
of MATLAB
% handles      structure with handles and user data (see
GUIDATA)

% Get default command line output from handles structure
varargout{1} = handles.output;

% --- Executes on button press in pushbutton1.
function pushbutton1_Callback(hObject, eventdata,
handles)
% hObject      handle to pushbutton1 (see GCBO)
% eventdata    reserved - to be defined in a future version
of MATLAB
% handles      structure with handles and user data (see
GUIDATA)
%clear figure(1);
numerador = [0 1 0];
for eta = [.1 .3 .5 .7 1]
    denominador = [1, 2*eta, 1];
    impulse(numerador,denominador);
    hold on;
end
legend('0.1', '0.3', '0.5', '0.7', '1')
title('Quest\~ao 1');
hold off

% --- Executes on button press in pushbutton2.
function pushbutton2_Callback(hObject, eventdata,
handles)
% hObject      handle to pushbutton2 (see GCBO)
% eventdata    reserved - to be defined in a future version
of MATLAB

```

```

% handles      structure with handles and user data (see
GUIDATA)
%clear figure(1);
numerador = [0 1 0];
for eta = [.1 .3 .5 .7 1]
    denominador = [1, 2*eta, 1];
    impulse(numerador,denominador);
switch eta
case 0.1
    impulse(numerador,denominador,'* black');
    hold on;
case .3
    impulse(numerador,denominador,'+ blue');
    hold on;
case .5
    impulse(numerador,denominador,'o
yellow');
    hold on;
case .7
    impulse(numerador,denominador,'- green');
    hold on
case 1
    impulse(numerador,denominador,'x red');
    hold on;
end;
end
legend('0.1', '0.3', '0.5', '0.7', '1')
title('Quest\fo 2');
hold off;

```

```

% --- Executes on button press in pushbutton3.
function pushbutton3_Callback(hObject, eventdata,
handles)
% hObject      handle to pushbutton3 (see GCBO)
% eventdata    reserved - to be defined in a future version
of MATLAB
% handles      structure with handles and user data (see
GUIDATA)
%clear figure(1);
numerador = [0 1 0];
denominador = [1 2 10];
    step(numerador,denominador);
    hold on;
    impulse(numerador,denominador);
    hold on;
legend('Step', 'Impulse');

```

```
title('Quest\fo 3');  
hold off
```

```
% --- Executes on button press in pushbutton1.  
%function pushbutton1_Callback(hObject, eventdata,  
handles)  
% hObject    handle to pushbutton1 (see GCBO)  
% eventdata  reserved - to be defined in a future version  
of MATLAB  
% handles    structure with handles and user data (see  
GUIDATA)
```