



Prince of Songkla University
Department of Electrical Engineering

Final Examination
Date: Oct. 5, 2010
Subject: 213-351 Computer Applications in BME

Semester: 1/2010
Time: 13:30-16:30
Room: A401

ชื่อ-นามสกุล รหัสนักศึกษา ตอนเรียนที่

หมายเหตุ

1. ข้อสอบมีทั้งหมด 6 ข้อ ในกระดาษคำถาม 13 หน้า
2. ห้ามการหยิบยื่นสิ่งใด ๆ ทั้งสิ้น จากผู้อื่น ๆ เว้นแต่ผู้คุมสอบจะหยิบยื่นให้
3. ห้ามนำส่วนใดส่วนหนึ่งของข้อสอบออกจากห้องสอบ
4. ผู้ที่ประสงค์จะออกจากห้องสอบก่อนหมดเวลาสอบ แต่ต้องไม่น้อยกว่า 30 นาที ให้ยกมือขออนุญาตจากผู้คุมสอบก่อนจะลุกจากที่นั่ง
5. เมื่อหมดเวลาสอบ ผู้เข้าสอบต้องหยุดการเขียนใด ๆ ทั้งสิ้น
6. ผู้ที่ปฏิบัติเข้าข่ายทุจริตในการสอบ ตามประกาศคณะวิศวกรรมศาสตร์

มีโทษ คือ ปรับตกในรายวิชาที่ทุจริต และพักการเรียน 1 ภาคการศึกษา

7. ให้นักศึกษาสามารถนำสิ่งต่อไปนี้เข้าห้องสอบได้

<input type="checkbox"/> ตำรา	<input type="checkbox"/> หนังสือ
<input checked="" type="checkbox"/> เครื่องคิดเลข	<input type="checkbox"/> กระดาษ A4 แผ่น
<input type="checkbox"/> พจนานุกรม	
<input type="checkbox"/> อื่น ๆ	

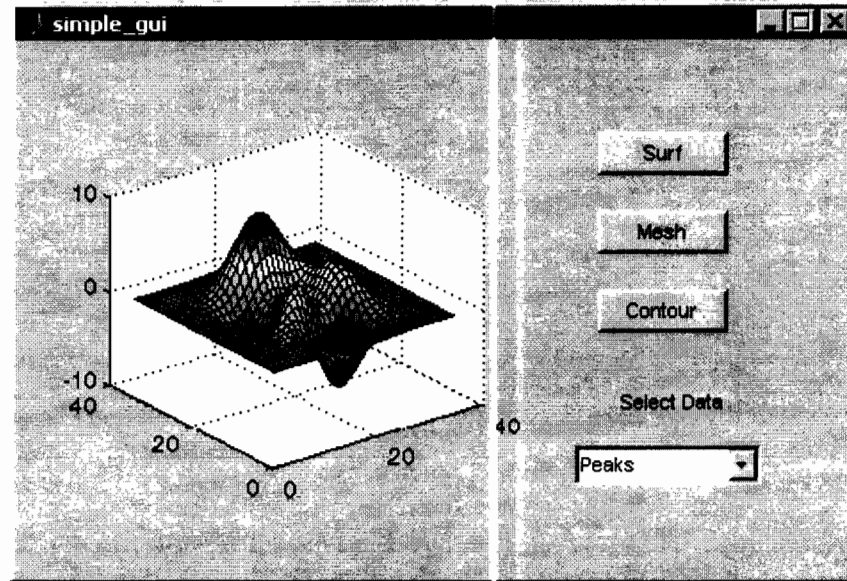
8. ให้ทำข้อสอบโดยใช้

<input checked="" type="checkbox"/> ดินสอ	<input checked="" type="checkbox"/> ปากกา
---	---

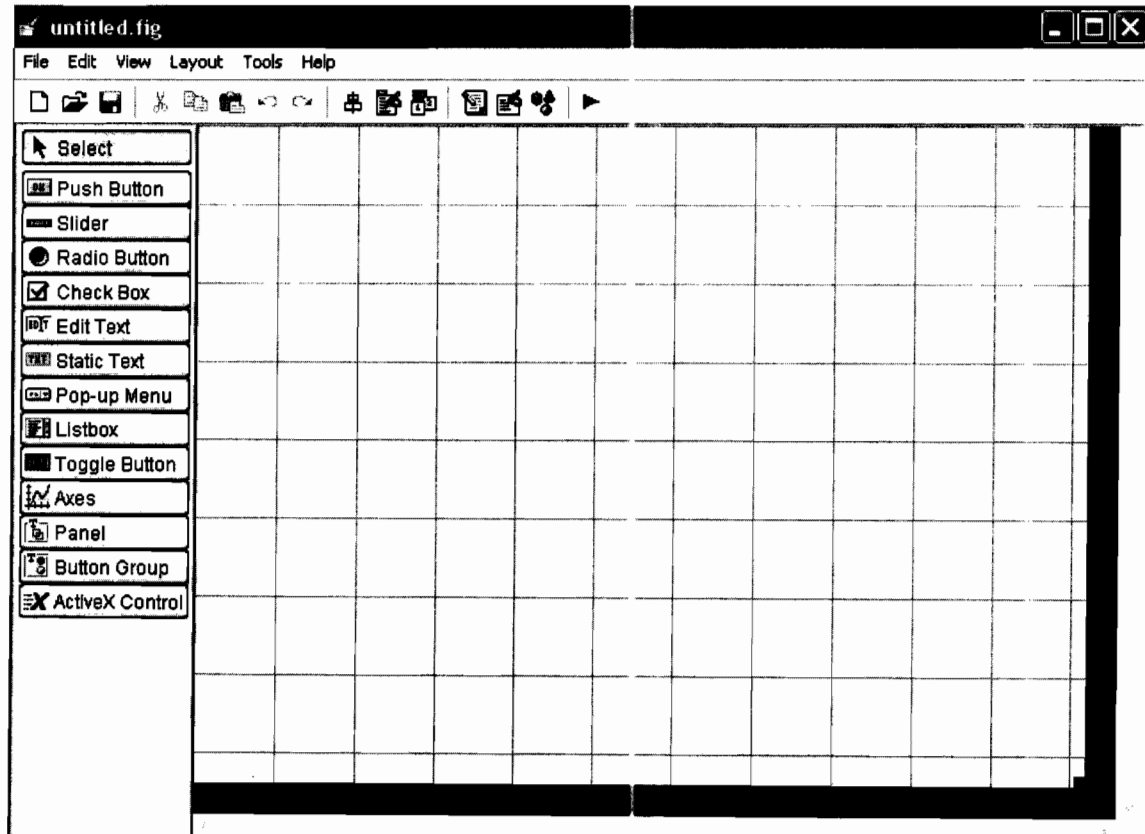
ข้อที่	1	2	3	4	5	6	รวม
คะแนนเต็ม	10	20	20	10	20	20	100
คะแนนที่ได้							

ผู้ออกข้อสอบ พรชัย พฤกษ์ภัทรานนท์
นักศึกษารับทราบ ลงชื่อ

1. หากทำการสร้าง GUI ดังแสดงในรูปข้างล่าง



โดยใช้ GUIDE ซึ่งมีหน้าต่างดังรูปข้างล่างนี้



จงหาว่าจะต้องใช้ GUI components ที่ประเภท และใช้ components ประเภทที่มีชื่อว่าอะไรบ้าง

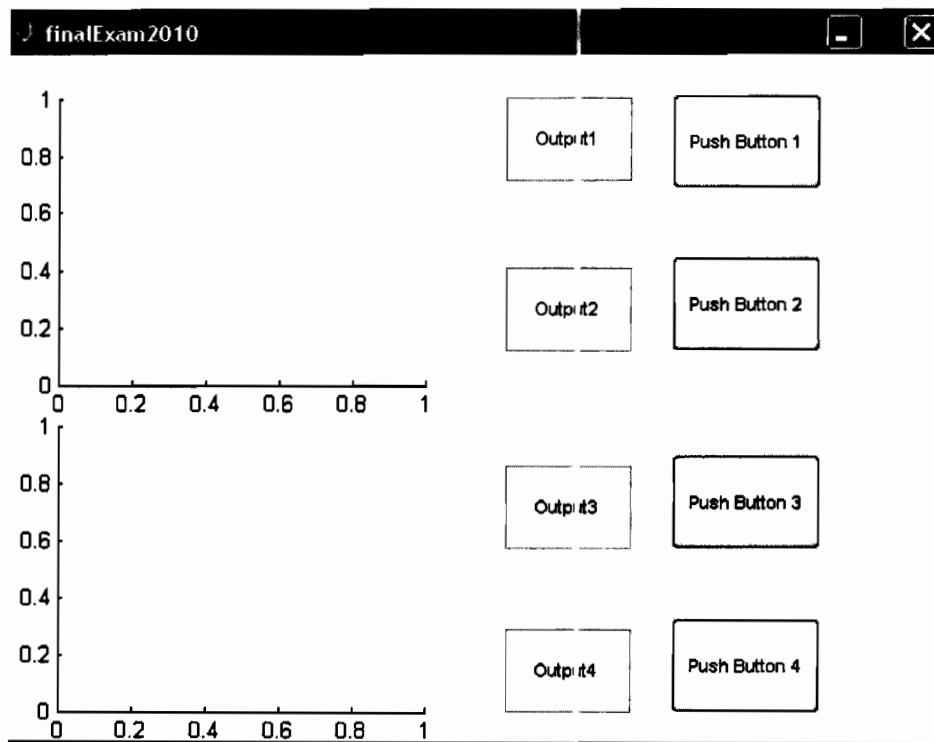
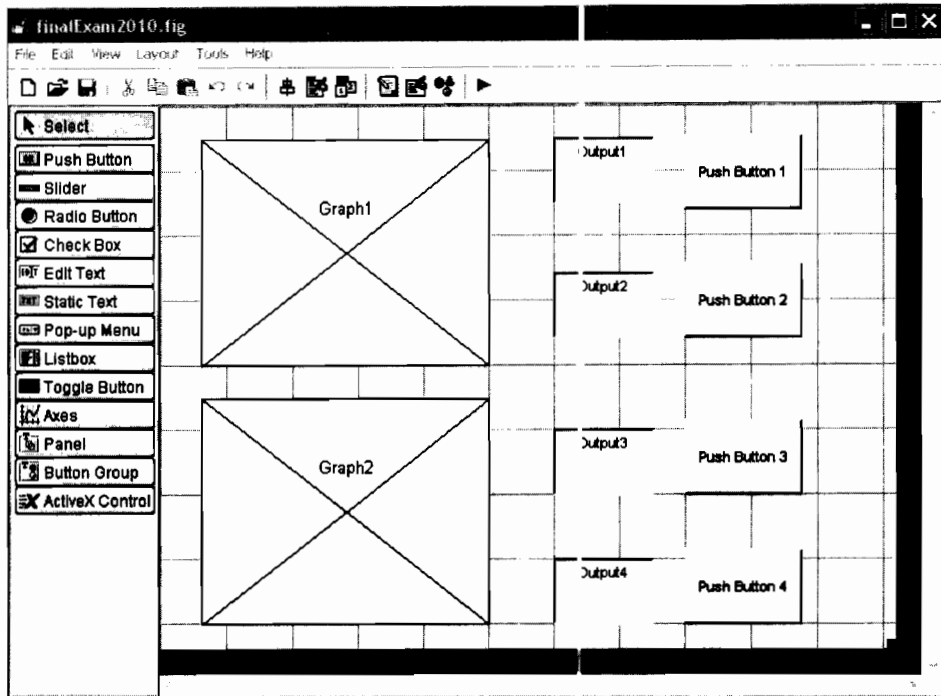
2. จงเขียนผลลัพธ์ของโปรแกรมต่อไปนี้เมื่อ

1.1 กดปุ่ม Push Button 1

1.2 กดปุ่ม Push Button 2

1.3 กดปุ่ม Push Button 3

1.4 กดปุ่ม Push Button 4



```

function varargout = finalExam2010(varargin)
% FINALEXAM2010 M-file for finalExam2010.fig
%   FINALEXAM2010, by itself, creates a new FINALEXAM2010 or raises the existing
%   singleton*.
%
%   H = FINALEXAM2010 returns the handle to a new FINALEXAM2010 or the handle to
%   the existing singleton*.
%
%   FINALEXAM2010('CALLBACK',hObject,eventData,handles,...) calls the local
%   function named CALLBACK in FINALEXAM2010.M with the given input arguments.
%
%   FINALEXAM2010('Property','Value',...) creates a new FINALEXAM2010 or raises
the
%   existing singleton*. Starting from the left, property value pairs are
%   applied to the GUI before finalExam2010_OpeningFunction gets called. An
%   unrecognized property name or invalid value makes property application
%   stop. All inputs are passed to finalExam2010_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 finalExam2010

% Last Modified by GUIDE v2.5 30-Sep-2010 20:18:31

% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
                  'gui_Singleton',  gui_Singleton, ...
                  'gui_OpeningFcn', @finalExam2010_OpeningFcn, ...
                  'gui_OutputFcn',  @finalExam2010_OutputFcn, ...
                  'gui_LayoutFcn',  [] , ...
                  'gui_Callback',    []);
if nargin && ischar(varargin{1})
    gui_State.gui_Callback = str2func(varargin{1});
end

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

% --- Executes just before finalExam2010 is made visible.
function finalExam2010_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 finalExam2010 (see VARARGIN)
A = 1;
B = 2;
C = 3;
D = 4;
x = 2:2:6;

```

```
y1 = x/2;
y2 = [2 4 2];
handles.A=A;
handles.B=B;
handles.C=C;
handles.D=D;
handles.x=x;
handles.y1=y1;
handles.y2=y2;

% Choose default command line output for finalExam2010
handles.output = hObject;

% Update handles structure
guidata(hObject, handles);

% UIWAIT makes finalExam2010 wait for user response (see UIRESUME)
% uiwait(handles.figure1);

% --- Outputs from this function are returned to the command line.
function varargout = finalExam2010_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;

function Output2_Callback(hObject, eventdata, handles)
% hObject handle to Output2 (see GCBO)
% eventdata reserved - to be defined in a future version of MATLAB
% handles structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of Output2 as text
% str2double(get(hObject,'String')) returns contents of Output2 as a double

% --- Executes during object creation, after setting all properties.
function Output2_CreateFcn(hObject, eventdata, handles)
% hObject handle to Output2 (see GCBO)
% eventdata reserved - to be defined in a future version of MATLAB
% handles empty - handles not created until after all CreateFcns called

% Hint: edit controls usually have a white background on Windows.
% See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
set(hObject,'BackgroundColor','white');
end

function Output4_Callback(hObject, eventdata, handles)
```

```
% hObject    handle to Output4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of Output4 as text
%         str2double(get(hObject,'String')) returns contents of Output4 as a double
```

```
% --- Executes during object creation, after setting all properties.
function Output4_CreateFcn(hObject, eventdata, handles)
% hObject    handle to Output4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns called
```

```
% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
```

```
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end
```

```
function Output3_Callback(hObject, eventdata, handles)
% hObject    handle to Output3 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
```

```
% Hints: get(hObject,'String') returns contents of Output3 as text
%         str2double(get(hObject,'String')) returns contents of Output3 as a double
```

```
% --- Executes during object creation, after setting all properties.
function Output3_CreateFcn(hObject, eventdata, handles)
% hObject    handle to Output3 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns called
```

```
% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
```

```
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end
```

```
function Output1_Callback(hObject, eventdata, handles)
% hObject    handle to Output1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
```

```
% Hints: get(hObject,'String') returns contents of Output1 as text
%         str2double(get(hObject,'String')) returns contents of Output1 as a double
```

```
% --- Executes during object creation, after setting all properties.
```

```
function Output1_CreateFcn(hObject, eventdata, handles)
% hObject    handle to Output1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns called

% Hint: edit controls usually have a white background on Windows.
%         See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

% --- 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)
axes(handles.Graph1);
plot(handles.x,handles.y2,':Ok');
set(handles.Output3,'string',num2str(handles.D));

% --- 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)

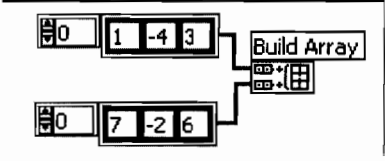
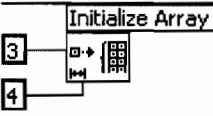
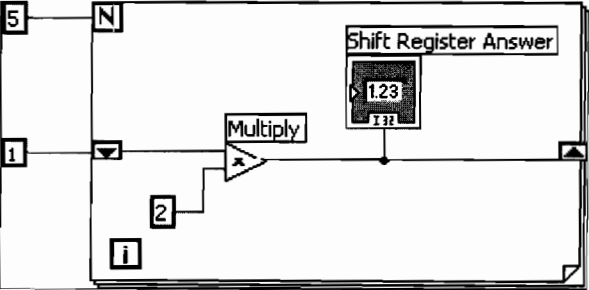
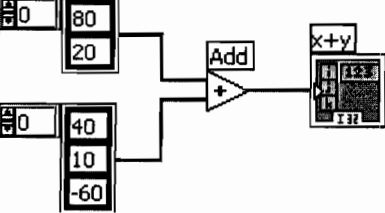
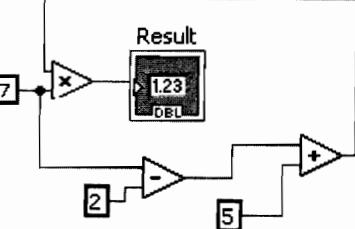
set(handles.Output1,'string',num2str(handles.C));

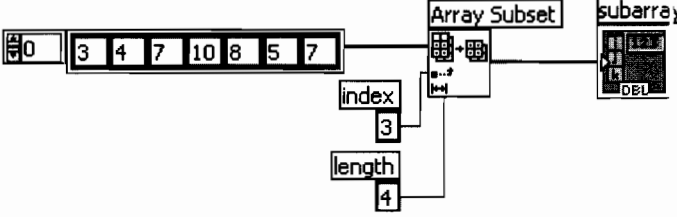
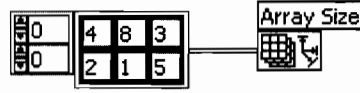
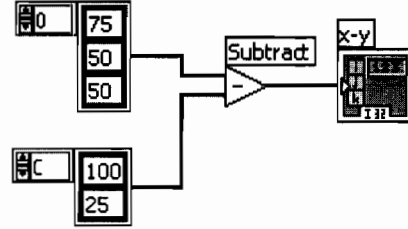
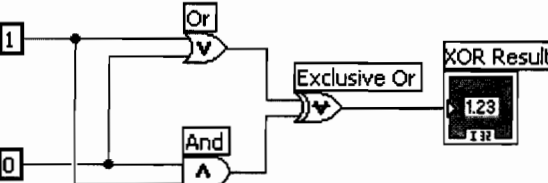
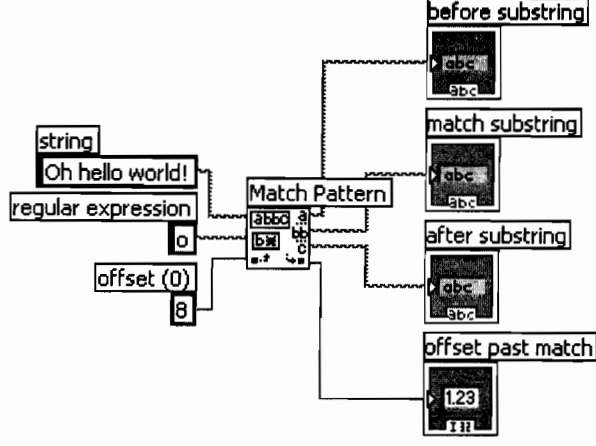
% --- Executes on button press in pushbutton3.
function pushbutton3_Callback(hObject, eventdata, handles)
% hObject    handle to pushbutton3 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
axes(handles.Graph2);
plot(handles.x,[4 2 4],':Ok');
set(handles.Output4,'string',num2str(handles.A));

% --- Executes on button press in pushbutton4.
function pushbutton4_Callback(hObject, eventdata, handles)
% hObject    handle to pushbutton4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

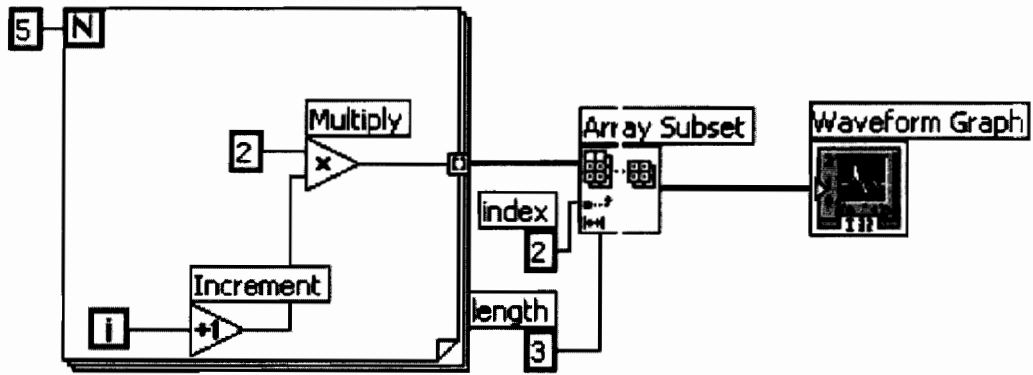
set(handles.Output2,'string',num2str(handles.C));
```

3. จงเขียนผลลัพธ์ของโปรแกรมต่อไปนี้

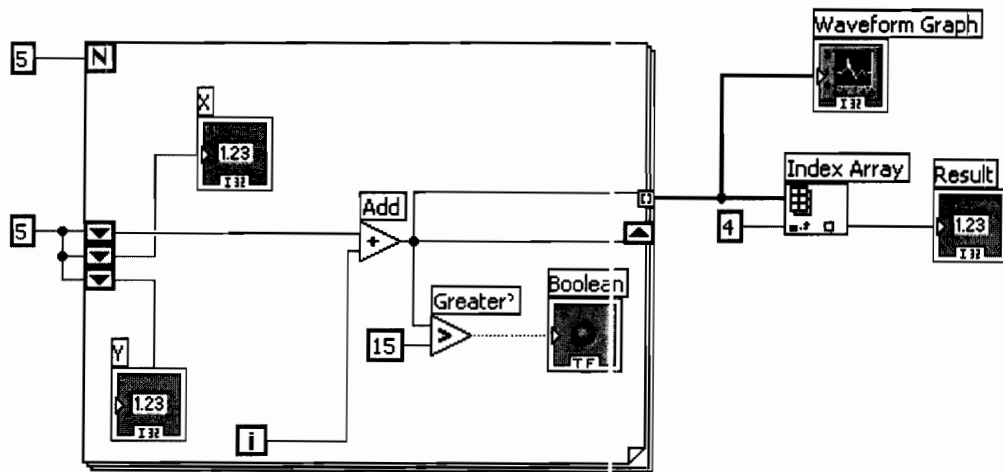
โปรแกรม	ผลลัพธ์
	
	
	
	
	

โปรแกรม	ผลลัพธ์
 <p>The diagram shows an array of numbers [0, 3, 4, 7, 10, 8, 5, 7]. The 'Array Subset' block is configured with an 'index' of 3 and a 'length' of 4. The output is a subarray containing the elements [7, 10, 8, 5].</p>	
 <p>The diagram shows a 2x3 array of numbers: [4, 8, 3; 2, 1, 5]. The 'Array Size' block outputs the dimensions of the array, which are 2 rows and 3 columns.</p>	
 <p>The diagram shows two arrays: Array A with values [75, 50, 50] and Array C with values [100, 25]. The 'Subtract' block performs element-wise subtraction (A - C), resulting in an array with values [-25, 25, 25].</p>	
 <p>The diagram shows a logic circuit with two inputs, 1 and 0. Input 1 goes to an 'Or' gate and an 'And' gate. Input 0 goes to the 'And' gate. The outputs of the 'Or' and 'And' gates are connected to an 'Exclusive Or' gate. The final output is 'XOR Result' with the value 1.23.</p>	
 <p>The diagram shows a 'Match Pattern' block. The input 'string' is 'Oh hello world!'. The input 'regular expression' is 'abc'. The input 'offset (0)' is 8. The block outputs four results: 'before substring' (abc), 'match substring' (abc), 'after substring' (abc), and 'offset past match' (1.23).</p>	

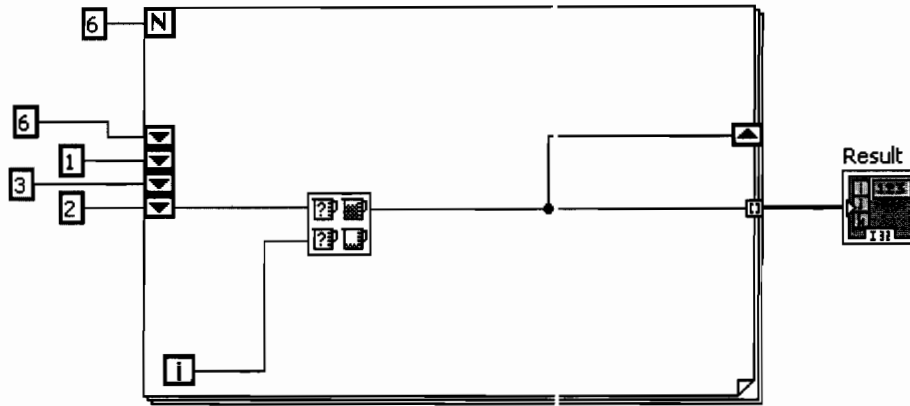
4. จงวาดกราฟผลลัพธ์ที่ได้ใน Waveform Graph ของโปรแกรมข้างล่างนี้



- 5.1 จงวาดกราฟผลลัพธ์ที่ได้ใน Waveform Graph ของโปรแกรมข้างล่างนี้
- 5.2 จงหาค่าตัวเลขที่ปรากฏใน Result ของโปรแกรมข้างล่างนี้
- 5.3 จงหาค่า X และ Y ที่ปรากฏในแต่ละรอบการทำงานของโปรแกรมข้างล่างนี้



6. จงหาค่าตัวเลขที่ปรากฏใน Result ของโปรแกรมต่อไปนี้



Context Help

Max & Min

x — — max(x,y)
 y — — min(x,y)

Compares **x** and **y** and returns the larger value at the top output terminal and the smaller value at the bottom output terminal. This function accepts time stamp values if all inputs are time stamp values. If the inputs are time stamp values, the function returns the later time at the top and the earlier time at the bottom. The wire is broken if the inputs are not the same data type. You can change the comparison mode of this function.

Detailed help