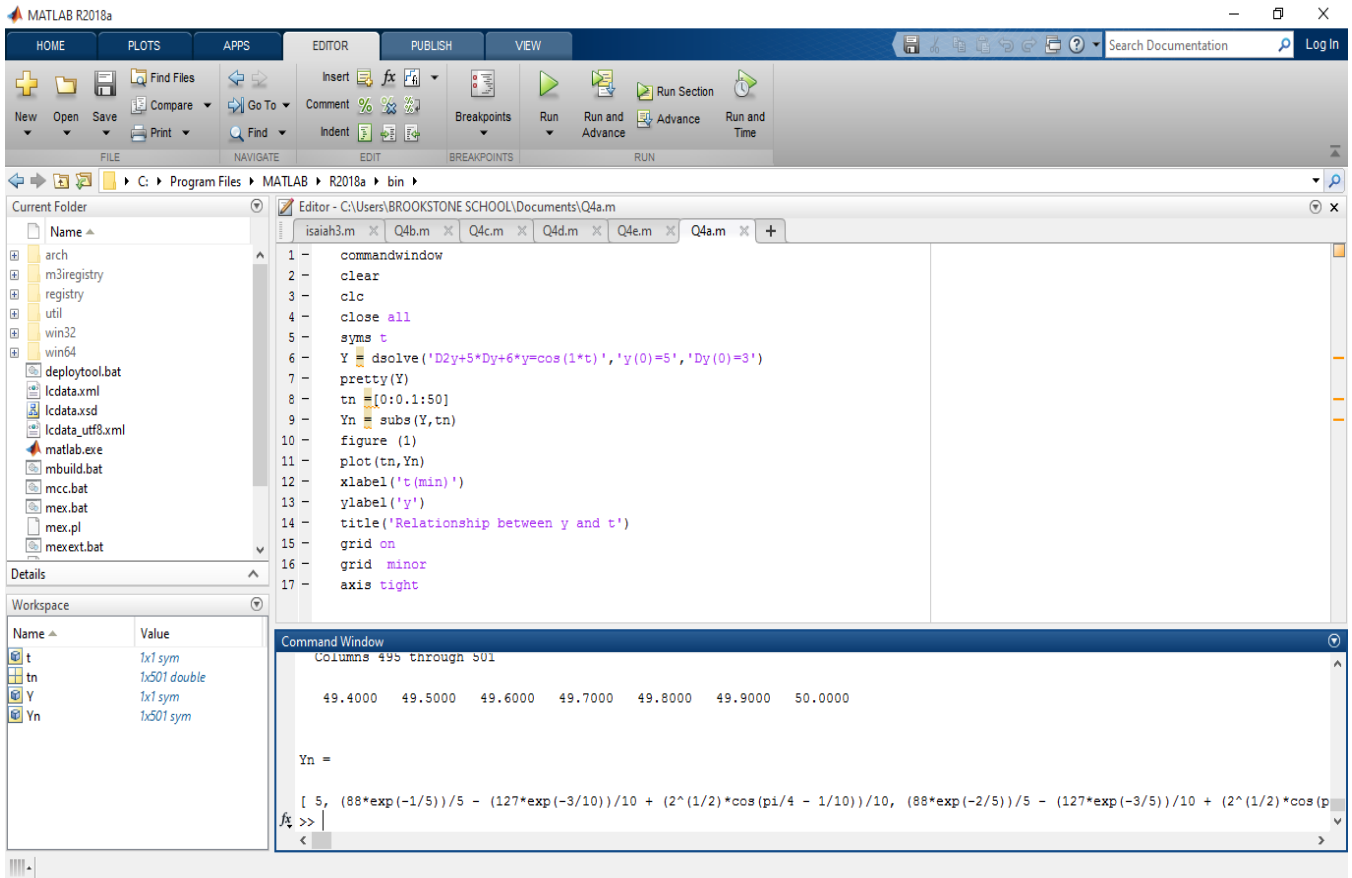
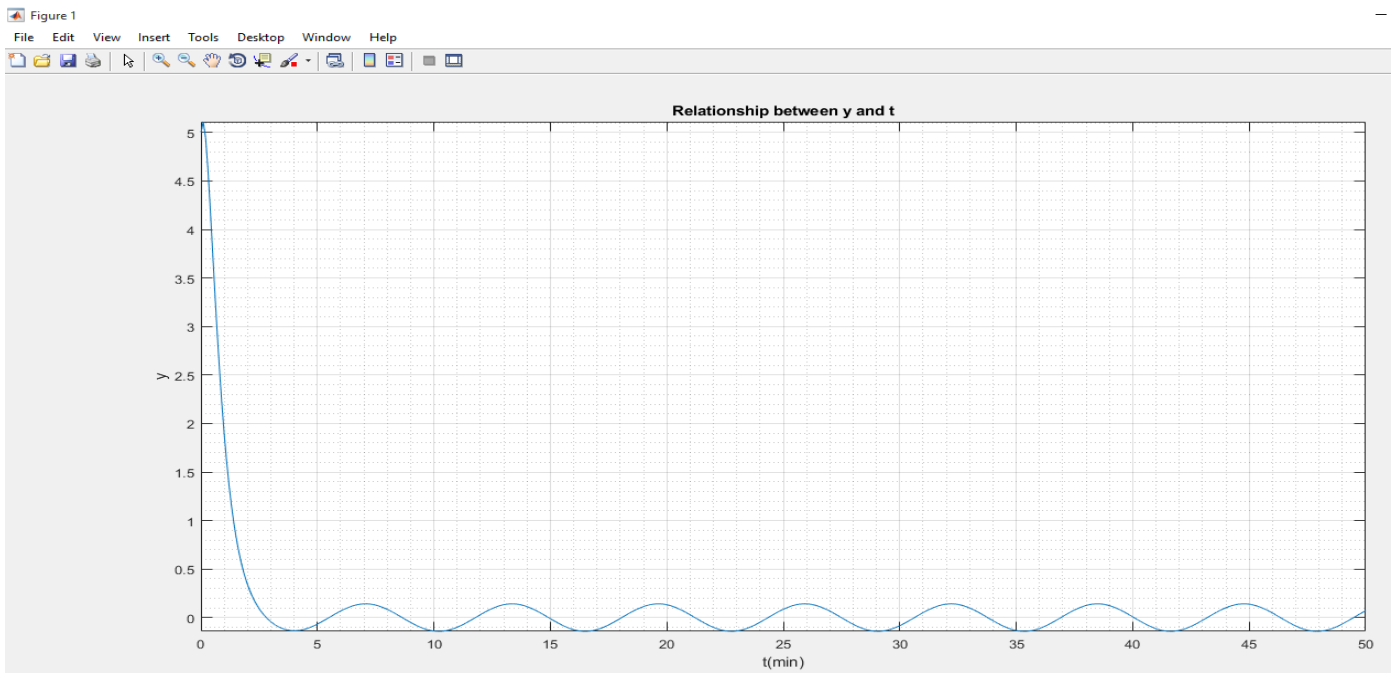


## ANSWERS TO QUESTION 4 TEST QUESTIONS

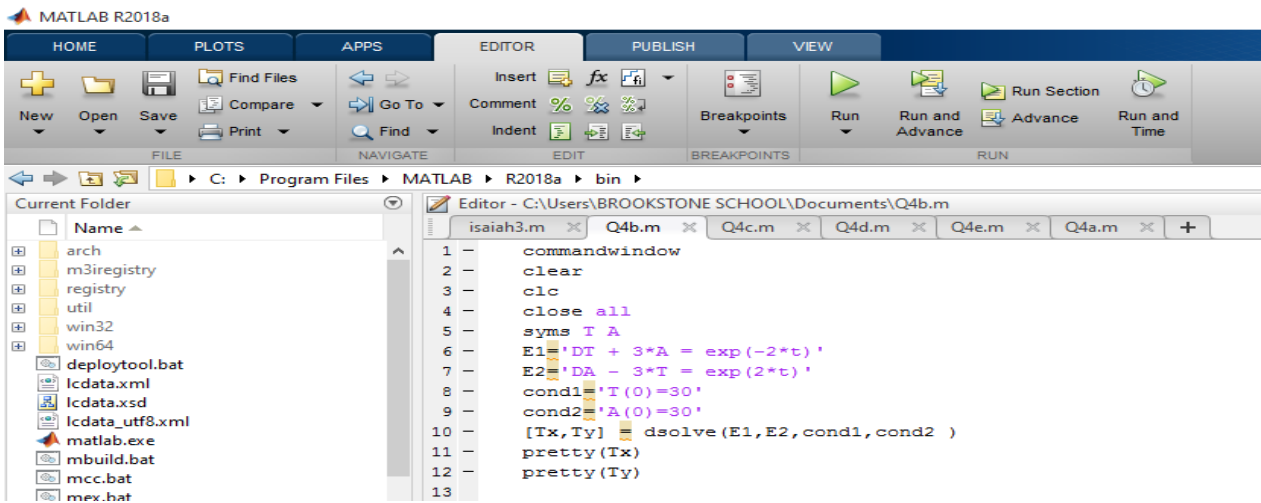
### 4a. solution.code.ans



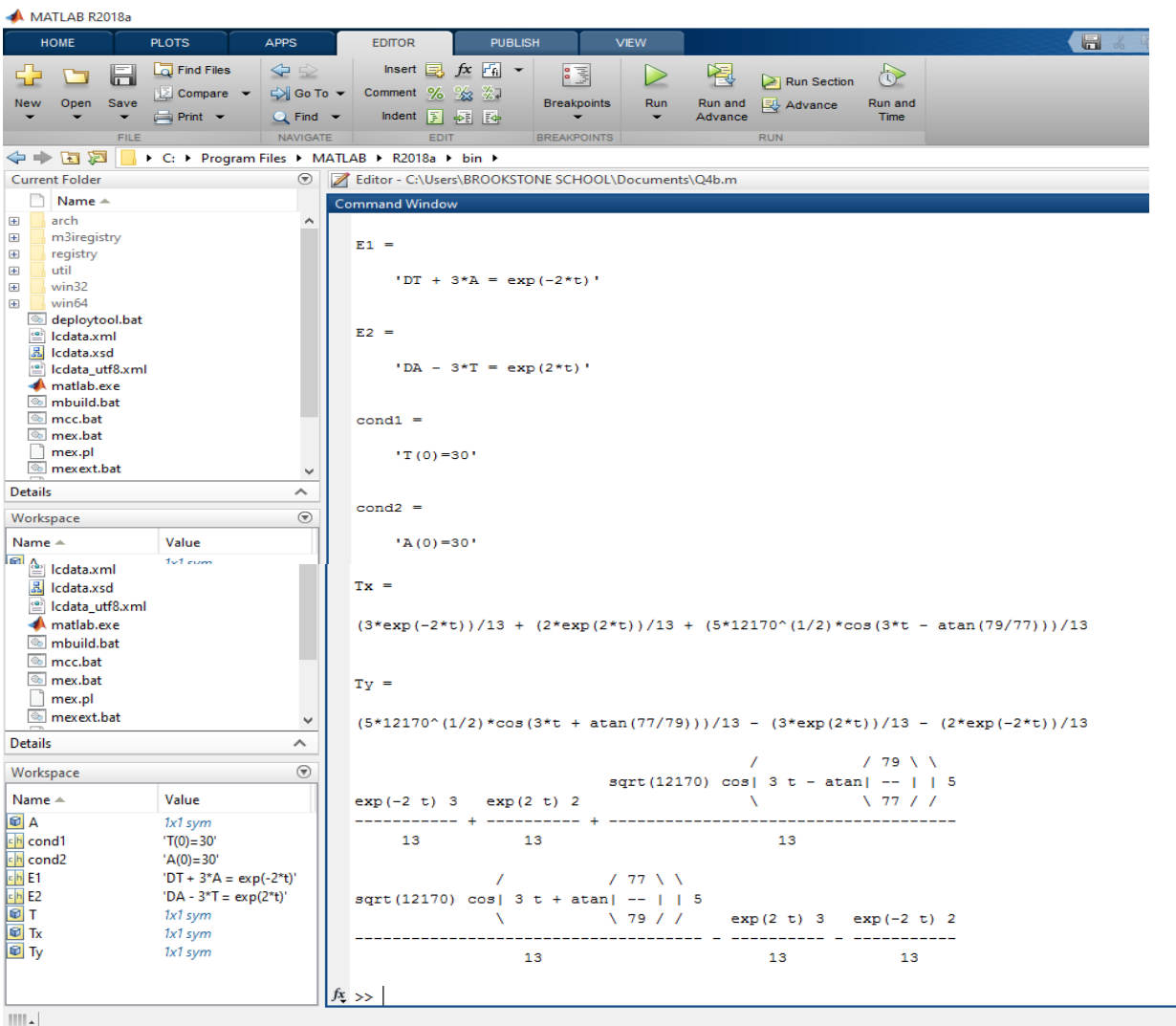
### 4a.solution.graph



4b. solution .code



4b.solution.ans



#### 4c. solution.code.ans

The image shows the MATLAB R2018a environment. The Editor window displays the following code:

```

1 -  commandwindow
2 -  clear
3 -  clc
4 -  close all
5 -  syms t R E L
6 -  I = dsolve('L*Di+R*i = E','i(0)=0')
7 -  pretty(I)
    
```

The Command Window displays the result of the symbolic solution:

$$I = \frac{E}{R} \left( 1 - \exp\left(-\frac{Rt}{L}\right) \right)$$

The Workspace window shows the following variables:

Name	Value
E	1x1 sym
I	1x1 sym
L	1x1 sym
R	1x1 sym
t	1x1 sym

#### 4d. solution.code.ans

The image shows the MATLAB R2018a interface. The Editor window displays a script named 'isaiah3.m' with the following code:

```
1 - commandwindow
2 - clear
3 - clc
4 - close all
5 - syms t k a w
6 - h = k*(exp(-a*t))*(cos(w*t))
7 - g = laplace(h)
8 - pretty(g)
9
```

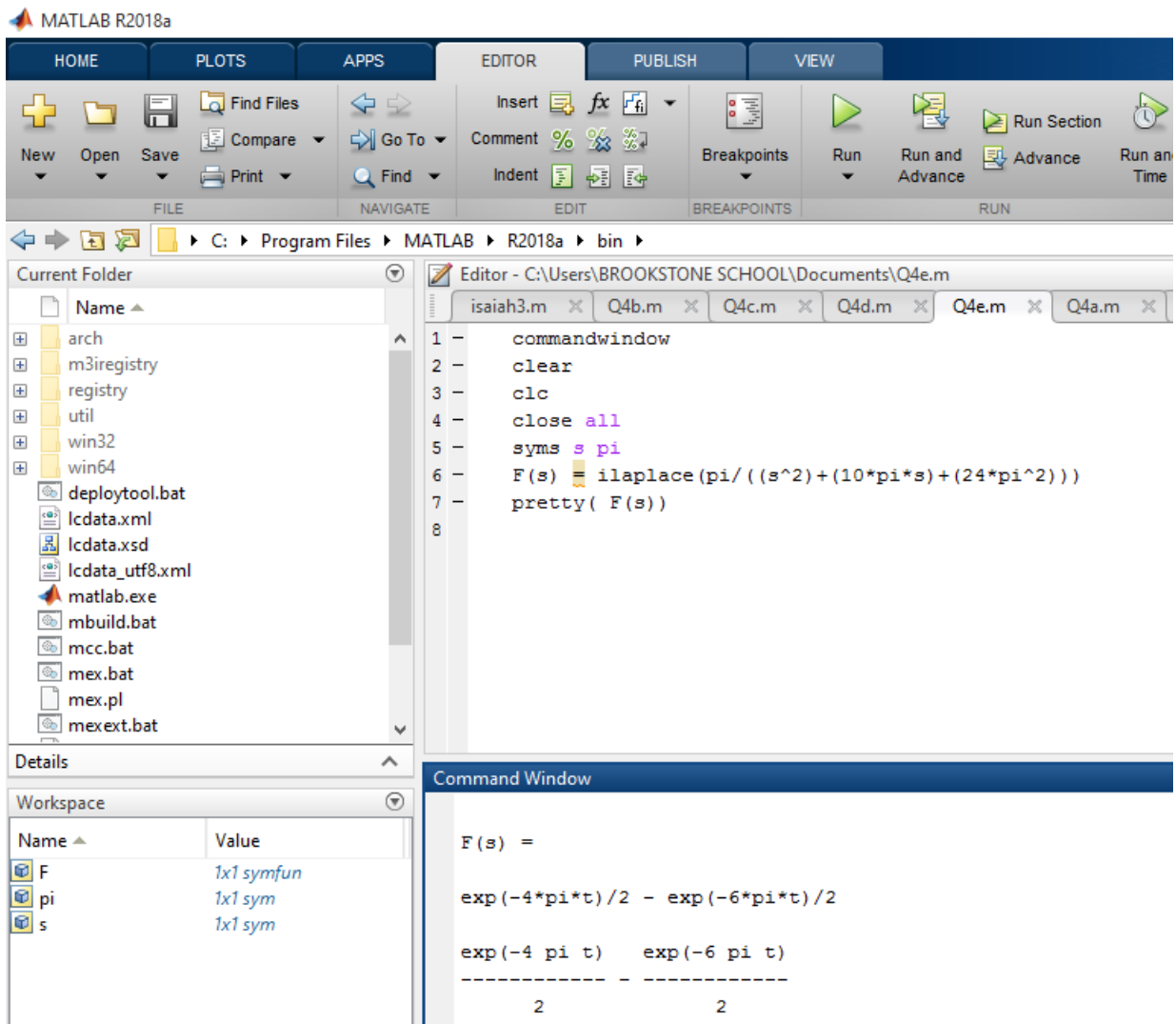
The Command Window displays the result of the Laplace transform:

$$h =$$
$$k \cdot \exp(-a \cdot t) \cdot \cos(t \cdot w)$$
$$g =$$
$$\frac{k \cdot (a + s)}{(a + s)^2 + w^2}$$

The Workspace window shows the following variables:

Name	Value
a	1x1 sym
g	1x1 sym
h	1x1 sym
k	1x1 sym
t	1x1 sym
w	1x1 sym

#### 4E. SOLUTION.CODE.ANS



The image shows the MATLAB R2018a software interface. The top menu bar includes HOME, PLOTS, APPS, EDITOR, PUBLISH, and VIEW. The toolbar contains icons for file operations (New, Open, Save, Compare, Print), navigation (Go To, Find), editing (Insert, Comment, Indent), breakpoints, and execution (Run, Run and Advance, Run Section, Run at Time).

The current folder is `C:\Program Files\MATLAB\R2018a\bin`. The workspace contains variables `F` (1x1 symfun), `pi` (1x1 sym), and `s` (1x1 sym).

The script editor shows the following code:

```
1 - commandwindow
2 - clear
3 - clc
4 - close all
5 - syms s pi
6 - F(s) = ilaplace(pi / ((s^2) + (10*pi*s) + (24*pi^2)))
7 - pretty(F(s))
8
```

The Command Window displays the symbolic result:

$$F(s) = \frac{\exp(-4\pi t)}{2} - \frac{\exp(-6\pi t)}{2}$$