
Homework #0

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Introduction

The purpose of this homework is to become familiar with the Matlab publish command and to see how to turn in homework problems.

```
function hmwk0()
```

```
    prob1()  
    prob2()
```

This is a slightly advanced technique for making sure your code executes to the end, even if one of your problems should fail.

```
    try  
        prob3()  
        fprintf('Problem 3 : Success!\n');  
    catch me  
        fprintf('Problem 3 : Something went wrong\n');  
        fprintf('%s\n',me.message);  
    end  
    fprintf('\n');  
  
    prob4()  
    prob5()  
  
end
```

Problem #1 : Area of a circle

In this problem, we compute the area of a circle of radius 4.5 and write it to a file 'area.dat'

```
function prob1()  
  
    R = 4.5;  
    area = pi*R^2;  
    write_file(area, 'area.dat');  
  
end
```

Problem #2 : Plot the graph of a function

```
function prob2()
```

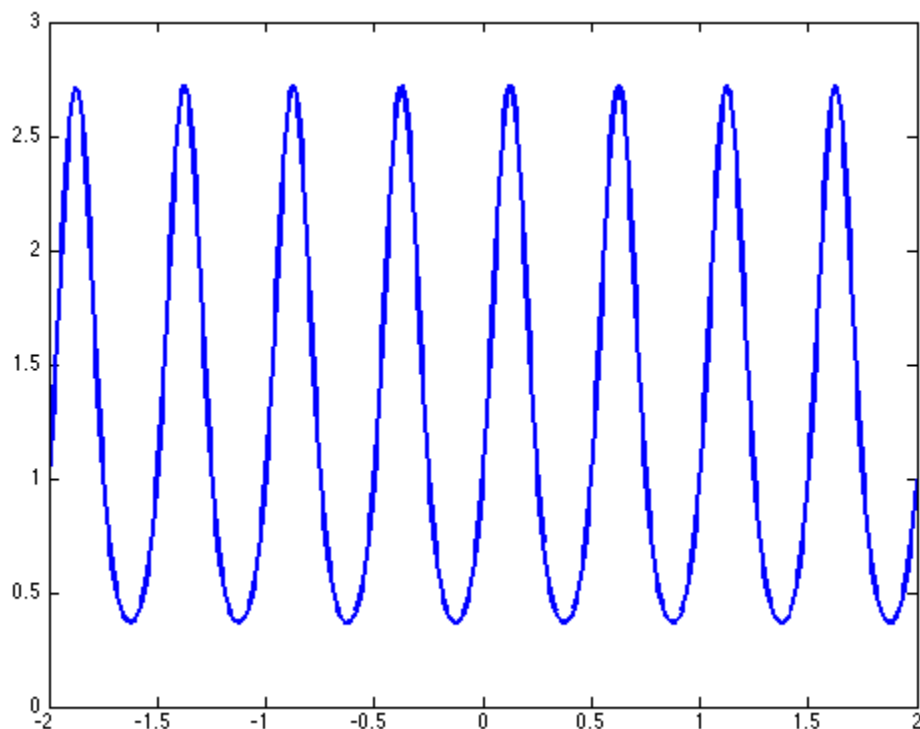
Create function handles for two functions and construct a third composite function.

```
% Anonymous function handles
f = @(x) sin(x);
g = @(x) exp(x);
h = @(x) g(f(4*pi*x));

% Construct a vector of equally spaced points
x = linspace(-2,2,500);

% Plot the results
plot(x,h(x), 'linewidth', 2);

end
```



Problem #3 : Array concatenation

```
function prob3()
```

Matlab makes it very easy to manipulate vectors and arrays! In this problem, we will learn how to concatenate arrays both horizontally and vertically. There is an intentional bug in this file, but the rest of the problems run to completion.

```
array1 = [1,2,3,4];
array2 = [5,6,7];

% Horizontal concatenation
long_array = [array1 array2 array1 array2]';

disp(long_array)

% Vertical concatenation
big_array = [array1; array2; array1; array2];

disp(big_array)

end
```

```
1
2
3
4
5
6
7
1
2
3
4
5
6
7
```

*Problem 3 : Something went wrong
Dimensions of matrices being concatenated are not consistent.*

Problem #4 : An easy problem that cannot fail

```
function prob4()
```

This problem will run, even if the problem above fails

```
y = sqrt(pi);
```

```
disp(y)
```

```
end
```

```
1.772453850905516e+00
```

Problem #5 : Some more publish commands

```
function prob5()
```

Publish allows you to create lists like this

- Step1
- Step2
- Step3

and also to include sample code that is not evaluated but still shows up in a nice code format.

```
curly = 5;  
larry = 10;  
moe = curly + larry;
```

You can include links like this link to [Google](#)

[end](#)

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