

## Source Code for the Examples Involving MATLAB

If an example involves computation with MATLAB, it is included in the chapter directories. By running an example, you will experience the computation and are free to modify the example for even better understanding. The examples in the book are primarily transcripts of computations in the Command Window. Each example in the directories **chapter 1**, **chapter 2**, ..., **chapter 23**, **Appendix A**, and **Appendix C** is an m-file. The output is made more attractive by the use of the MATLAB functions `fprintf` and `disp` rather than obtaining output by leaving off the terminating semicolon. If you are unfamiliar with these functions, use the MATLAB help system as follows:

```
>> help fprintf;
>> help disp;
```

The examples use `fprintf` to display text and the value of an integer or real number. As an example, for the matrix

$$A = \begin{bmatrix} 1 & -9 & 0 \\ 3 & 5 & 2 \\ 12 & -1 & 7 \end{bmatrix}$$

the `fprintf` statement

```
fprintf('The norm of the matrix A is %.3f.\n',norm(A));
```

outputs

```
The norm of the matrix A is 14.382.
```

The function `disp` provides a means of labeling the output of an array. For example

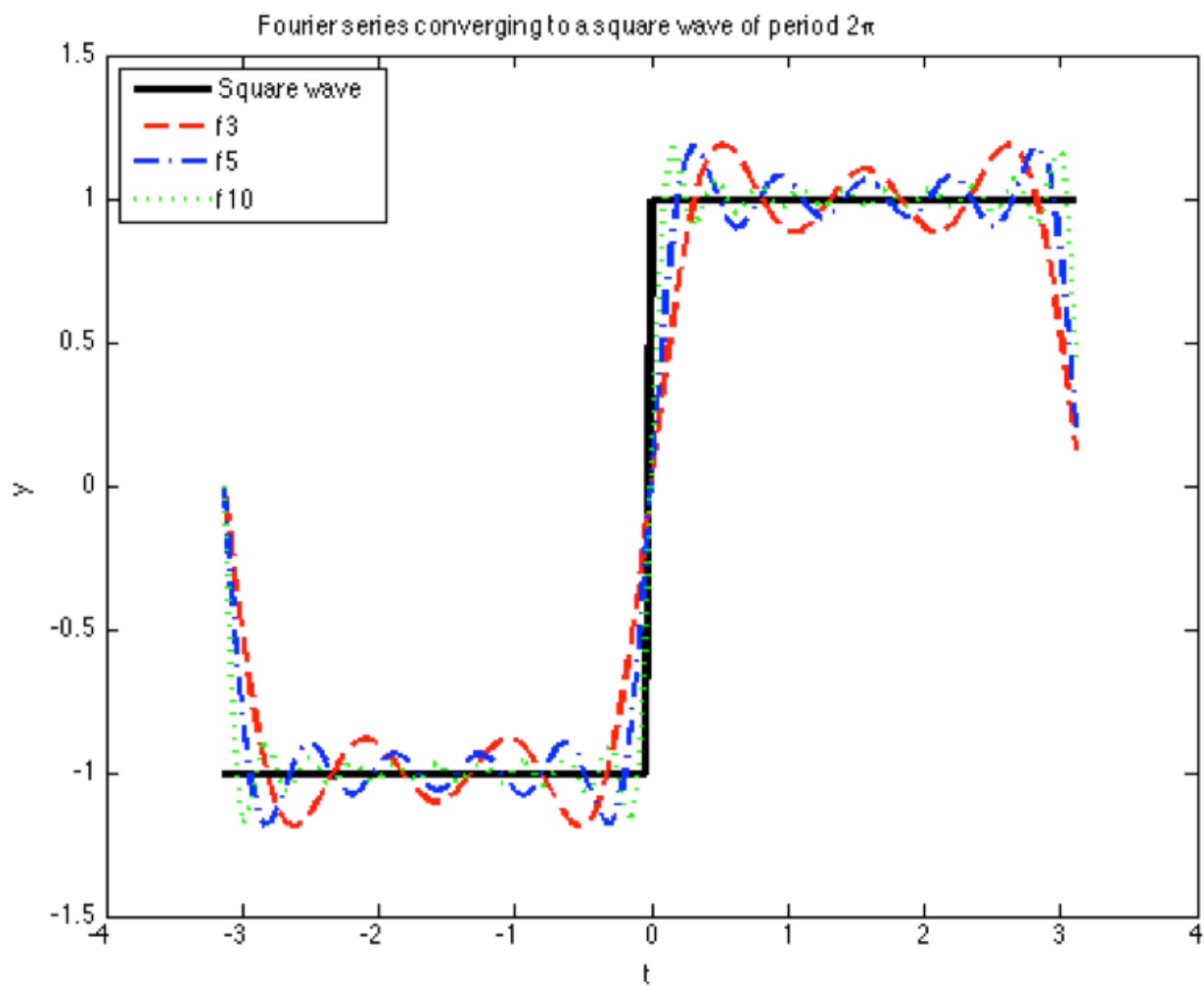
```
disp('The 3x3 matrix A =');
disp(A);
disp('A^8 =');
disp(A^8);
```

Output:

```
The 3x3 matrix A =
    1    -9     0
    3     5     2
   12    -1     7

A^8 =
  19508554   -14699772   10436094
   -9014868    27201352   -3690780
    7424253    64461954    7856431
```

There are additional m-files not derived from an example that are intended to supplement the text. For instance, one of the topics in Chapter 12 is Fourier series. The text develops the Fourier series for a square wave and presents a plot to that shows the square wave and some of the partial sums of the converging Fourier series.



The m-file *fourierconv.m* in the directory **chapter 12** creates the graph.

If you have a comment about an example, feel free to email me at [wford@pacific.edu](mailto:wford@pacific.edu).