

Phys.494-Spring 2008
MATLAB-3

[A] PLOTTING

Type at the command prompt:

```
% Script File: sineANDcosinePLOT.m
%
% plots sine and cosine together
% in various ways
%
x=linspace(0,pi,200);
y1=sin(2*pi*x);
y2=cos(2*pi*x);
plot(x,y1,x,y2); % plot y1 and y2 as a fn. of x
pause          % MATLAB waits until
                % a key is pressed in the command window.
plot(x,y1); % plot y1 as a function of x
hold on; % want to put another plot into the same figure
plot (x,y2,'--'); % plot y2 as a function of x
                % along with y1 in the same figure
hold off % figure is finished
pause
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

Two different plots in the same figure

```
subplot(2,1,1); % 2 rows of plots in the figure
                % 1 column of plot in the figure
                % we are now drawing the first (top) plot
plot(x,y1);
title('The function  $y_1=\sin(2\pi x)$ ')
xlabel('x (in radians)')
ylabel('y1')

subplot(2,1,2); % 2 rows of plots in the figure
```

```
                % 1 column of plot in the figure
                % we are now drawing the second (bottom) plot
plot(x,y2);
title('The function  $y_2 = \cos(2\pi x)$ ')
xlabel('x (in radians)')
ylabel('y2')
```

Change directory and go to the folder you saved the 'sineANDcosinePLOT.m' file.
(use cd commands and then check that you are at the correct
directory by pwd command.)

Then type at the prompt:

```
>> sineANDcosinePLOT
>> help sineANDcosinePLOT
```