```
% Signals and Systems: Lab 2
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clear
close all
```

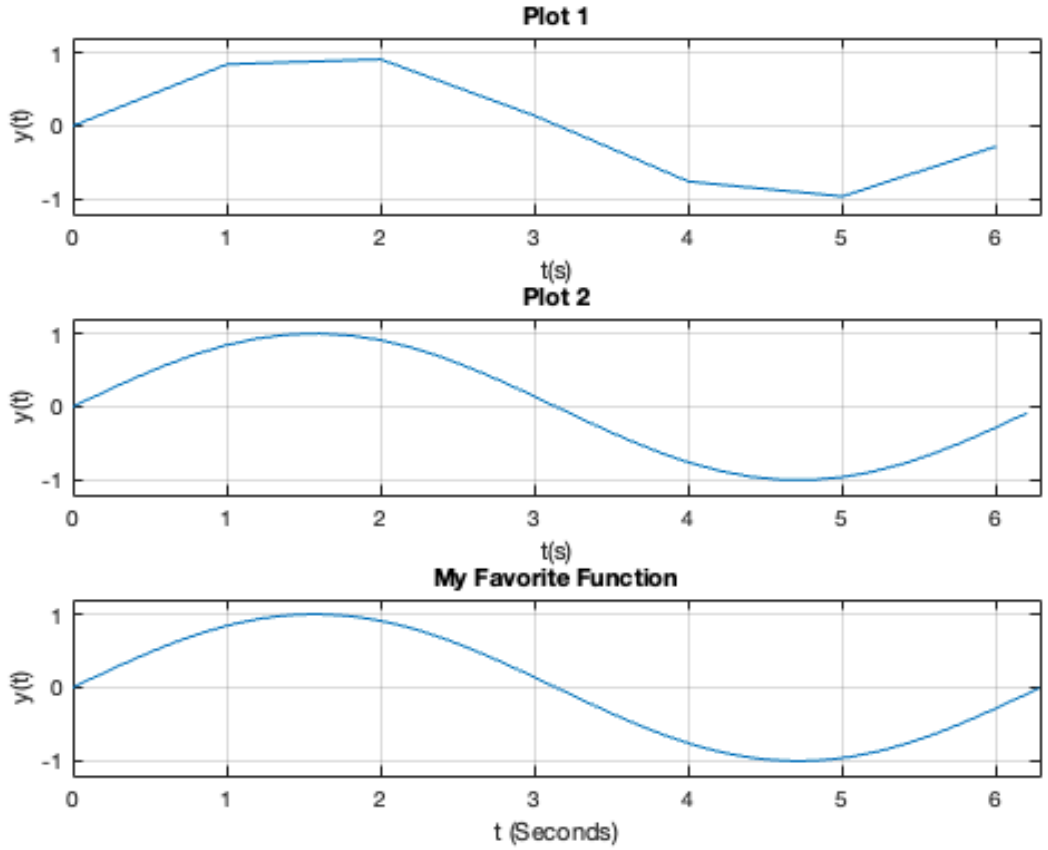
Question 1: Plotting Continuos-Time Signal

```
subplot(3,1,1)
t = 0:2*pi; plot(t,sin(t))
title('Plot 1')
xlabel('t(s)')
ylabel('y(t)')
grid on
axis([0 2*pi -1.2 1.2]);

subplot(3,1,2)
t = 0:0.2:2*pi; plot(t,sin(t));
title('Plot 2')
xlabel('t(s)')
ylabel('y(t)')
grid on
axis([0 2*pi -1.2 1.2]);

subplot(3,1,3)
t = 0:0.02:2*pi; plot(t,sin(t));
axis([0 2*pi -1.2 1.2]);
% Adding a title, axis labels and changing the axis
title('My Favorite Function');


xlabel('t (Seconds)');
ylabel('y(t)');
grid on
axis([0 2*pi -1.2 1.2]);
```

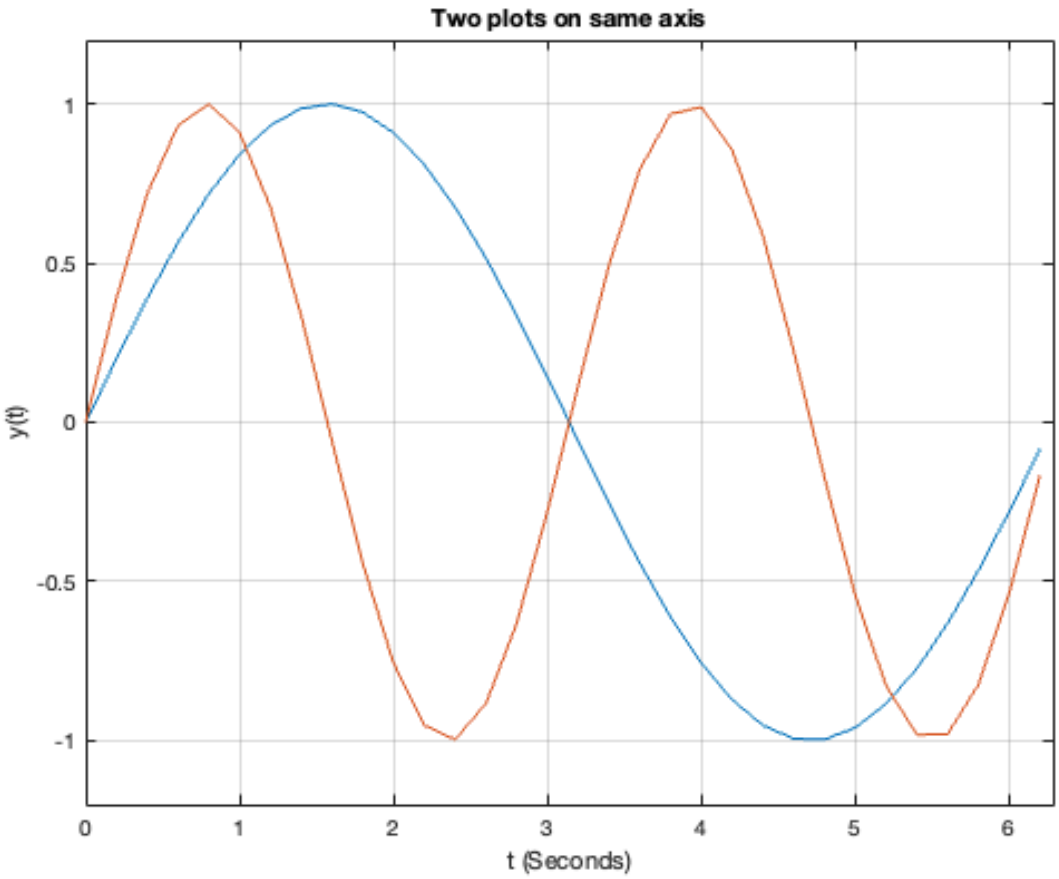


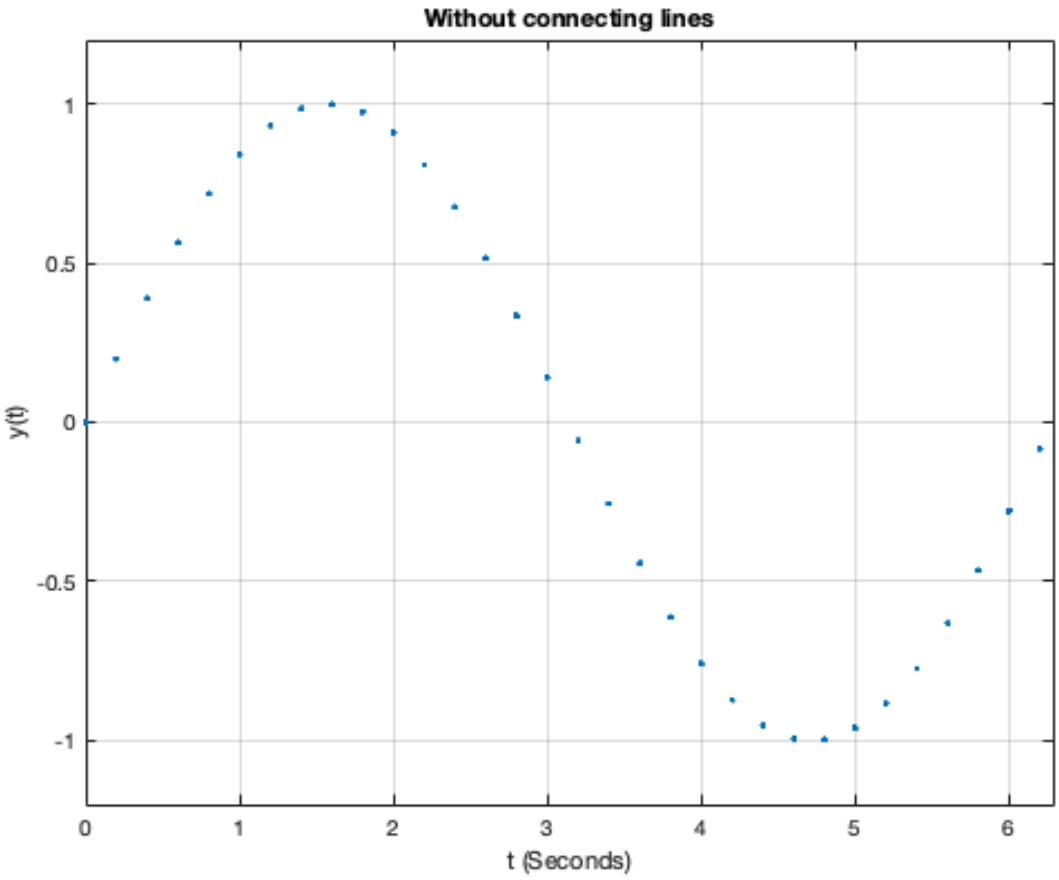
Explain why the plots are different? The first plot range increments by the integer values only so not as smooth. As for the second plot, the range of t is from 0 to 2pi with a step size of 0.2, so the plot is not that smooth but smoother than the first graph. Finally, and as for the 3rd plot, it has the same range as the first two plots but it is smoother because of its smaller step size (an order of magnitude lower than the 2nd plot.

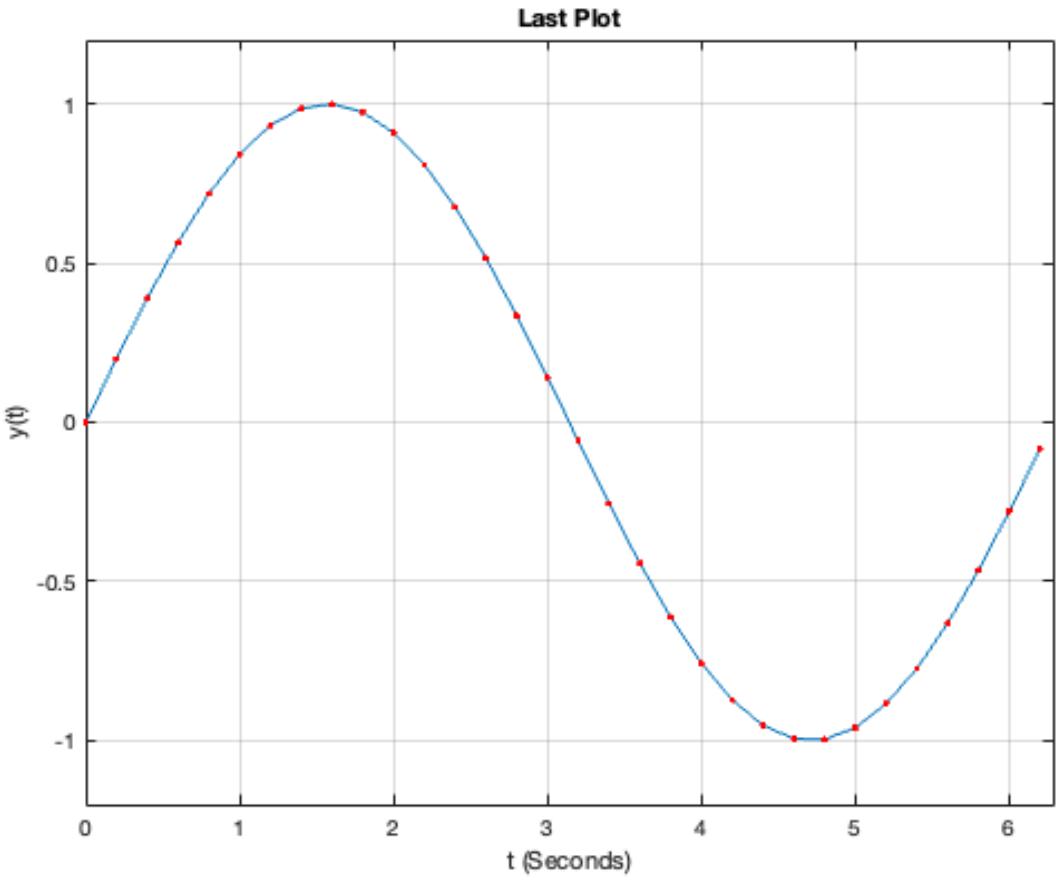
```
% Put two plots on the same axis
figure;
t = 0:0.2:2*pi; plot(t,sin(t),t,sin(2*t))
title('Two plots on same axis');
xlabel('t (Seconds)');
ylabel('y(t)')
axis([0 2*pi -1.2 1.2])
grid on

% Produce a plot without connecting the points
figure;
t = 0:0.2:2*pi; plot(t,sin(t),'.')
title('Without connecting lines');
xlabel('t (Seconds)');
ylabel('y(t)')
axis([0 2*pi -1.2 1.2])
grid on
```

```
% Produce a plot without connecting the points
figure;
t = 0:0.2:2*pi; plot(t,sin(t),t,sin(t),'r.')
title('Last Plot');
xlabel('t (Seconds)');
ylabel('y(t)')
axis([0 2*pi -1.2 1.2])
grid on
```




Without connecting lines
y(t)
t (Seconds)
1
0.5
0
-0.5
-1
0
1
2
3
4
5
6



What does r do? r changes the color of the points to red

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