PROBLEM:

Suppose that MATLAB is used to plot a sinusoidal signal. The following MATLAB code generates a signal $x[n]$ and plots it. Unfortunately the plot does not have its time axis labeled properly.

```
dt = 0.01;
Duration = 0.3;
tt = 0 : dt : Duration;
Fo = 394;
xx = 9*cos( 2*pi*Fo*tt  + pi/2 );
stem( xx )      %<--- OOPS! there is no time axis
```

(a) Make a plot of the signal—either sketch it or do it via MATLAB.

(b) For the plot above, determine the correct formula for the discrete-time signal in the form:

$$x[n] = A\cos(\hat{\omega}n + \phi)$$

(c) EXPLAIN how aliasing affects the plot that you see.