Exercise 2 - Graphing:

You know how to spawn a vector of values and evaluate and graph a function. Let's do something cool with functions. Of course, some functions are more interesting than others. For instance, consider this one:

$$y = e^{-0.2t} sin(t)$$

This function describes the behaviour of a damped spring with time. See `http://en.wikipedia.org/wiki/File:Damped_spring.gif`.

Notice that the paramter t is a measure of *time* in say, seconds. Graph y for t from 0 to 30 seconds. Graph the function and convince yourself that this figure does indeed describe the behaviour of a damped spring.

Save your plot to disk.

Simply graphing a function can yield a surprising amount of information. For instance, with the figure you generated, you should be able to:

- Find the maximum amplitude (the first peak)
- Find the time at which the 3rd peak is reached
- Replace 0.2 with some other numbers between 0 and 1. Can you attach a physical significance to this number?

Useful Hints and Functions

- Remember to use a dot when you perform exponentiation, division or multiplication!
- Check out `ginput`! Run `help ginput`

```
% We want to graph the function e(-0.2t)sin(t)
% for values of 't' from 0 to 30 minutes
%
% Create the vector t
t = linspace(0, 30, 10); % After you're done, try 100 points instead of 10

% Try graphing the following functions on the shell
% first:
%
% a = sin(t)
% b = exp(-0.2*t)


% ---------- YOUR CODE  HERE ---------- %



% ------------------------------------- %
```