Assignment 1 (Due end of Week 3):

Create a nonlinear equation solver that Newton's method, but using a numerical derivative.

The user should be able to call the function in the following way:

```
import [your initials]_search as [your initials]

x = [your initials].newtonzero(f,x0,tol)
```

Where f is any function and x0 is an initial estimate, and tol is the desired tolerance in x. The solver should handle the following situations:

1. When the algorithm gets caught in a cycle
2. When it starts running off to infinity
3. When it just takes too long to converge

The code will be graded according to the following scale:

Effectiveness (i.e. whether it works and survives the above tests):	60%
Overall "elegance" (i.e. how easy the code is to read):	10%
Comments (whether they are comprehensible):	30%