Simpson.m

This function numerically integrates y with respect to x. This function uses numerical integration *(in this case Simpson's 1/3rd Rule)* to calculate the integral. In some cases it will use Simpson's 1/3rd rule alongside a single application of the trapezoidal rule, **though it will warn the user when doing so**.
Within MATLAB *(or Octave)* this function can be called upon using `I = Simpson(x,y)`.
Note: Simpson.m must be within your path *(or working directory)* for this to work.

Inputs

- `x` - A vector of the same size as `y`.
- `y` - A vector of the same size as `x`.

Outputs

- `I` - The numerically calculated integral of y with respect to `x`.

Useful Knowledge

- The `x` vector must be evenly spaced in order for this algorithm to work.
- This function integrates **vectors**, not anonymous functions or symbolic ones. It is recommended to use the standard `integral` function for these.

Limitations

This function will not be as accurate as MATLAB's built in function `integral`, though it should be more accurate than the `trapz` function. Overall this function is not optimized well *(at all really)* and relies heavily on multiple if statements to determine what version of Simpson's 1/3rd rule to use. The function can also encounter errors if your `x` vector has very small spaces, and it cannot work at all if the `x` vector is not evenly spaced.