Notes on matlab functions
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In addition to the m-files which are scripts of commands, there can be m-files which are defined to be
matlab functions. The name of the m-file and the function are the same. Below is an example of a function
which can be used to calculate your textbooks tri(t) function. The file is named trih.m, and is to be saved
in the work directory (which should be a directory accessed in your local path environment). The function is
named trih also. The format for the matlab function code is given with the trih.m file as shown below:

```matlab
function y=trih(t)
%TRIH triangle function centered at t=0 from t=-1 to t=+1 with
%trih(0)=1.
% usage:
%     y = trih(t)
% where:
%     t = input vector
%     y = output vector
if nargin==0 | nargin>1) %check that there is only one argument
    error('only one input argument, a vector') %error output to user
end
x=abs(t); %two lines of code from Ambardar code for tri(x)
y=(1-x).*(x<=1); %note logic x<=1 is 1 if true and 0 if false
```

Some things that you should note are:
1) the format of the first command line and subsequent comment lines – these are shown if the command
help trih is entered
2) the error check on the number of arguments and the output text for error explanation to the user
3) the use of the ; to inhibit the user output
4) the need to define the input vector t prior to the use of the function; also, the argument does not have to
be named t, but could be entered as z
5) likewise, the output variable does not have to be named y, but could be entered as f.

Note also the name of the function is trih, which will not conflict with the adsp function tri. If you do not
have the adsp functions available, then you can enter the function as tri(t). Note that you could still enter
the function as tri(t), save it in your work directory, and there would be no conflict.

Enter the code for the m-file and save it in your work directory. Then execute the following commands and
observe the results:
help trih
t = -2:0.01:2;
y = trih(t);
plot(t, y)
y = trih(x,t);
x=1;
y=trih(x,t)
plot(t, 4*trih(2*t-1)