

MECH417 Lab 1 Hints

1) skip 1 vi and vii (the *eig* stuff)

2v) Hint: think “polynomial” and $x = 1^{1/3}$

3) Use the element-by-element dot (.) operator where appropriate

4) The for-end loop is evaluating the following Fourier series at all values in vector t:

$$y(t) = \sum_{i=1}^n \frac{(-1)^{i+1}}{2i-1} \cos[(2i-1)t]$$

4i) The Fourier series for a triangular wave is:

$$y(t) = \frac{8}{\pi^2} \sum_{i=1}^n \left[\frac{\sin\left(\frac{i\pi}{2}\right) \sin(it)}{i^2} \right]$$

4ii) Hint: a double sum can be created with *nest for* loops:

```
for i ...  
    for j ...  
        ...  
    end  
end
```

Another hint ... type in:
help size

General hints:

- to have multiple plots appear from a single M-file (or a single cell), precede each *plot* command with a *figure* command (see help for more info). You can use a *pause* and *close all* at the end of your file to give yourself time to view the figures and to close all of the windows (after hitting Enter in the command window).
- the cell (%%) and publish features of Matlab can be useful for generating complete documentation of your work and results; otherwise, you can just copy and paste code, results, and plots into a Word file.