

COEN 45
Winter Quarter, 2011
Homework #3
Due Tues Jan 25

You can put all these problems into one script. Print the script, the plot, and the output that appears in the command window. Problems from Chapter 3, 4th ed.:

- #3. Use the colon operator to create the vector \mathbf{x}
- #6. Be careful about units. Create variables such as `rho_al` and use a comment to indicate units:

```
rho_al = 2700; %% Density of Al, kg/m^3
```

Make a plot of v vs. t . Give it a title and label the axes.

- #9. Do `u = [-8 -14 25]`; and then write a single command to get the unit vector.
- #23. The problem statement is a little confusing. Make `n` be the entire vector: `n=1:10` then `n=1:20` etc. Use element-by-element operations to do the sum all at once.
- #20. Refer to #19 for the equations for $x(t), y(t)$. In addition to displaying the three-column matrix, make a plot of the length of r_{AB} versus time (the physical length, not the MATLAB `length`).
- Try to solve the following system of equations using left division:

$$\begin{aligned}x &= 2y - 3z + 2 \\4x - 8y &= -12z + 2 \\x + z &= 3\end{aligned}$$

Look at the equations and explain why you were unable to obtain a solution.