

## Week 6 - Student Led Review

Reminder - the best place to learn MATLAB (or anything, really) is the internet! [StackOverflow](#) and MathWorks' own [MATLAB Exchange](#) are filled to the brim with people asking and answering questions about MATLAB. [MATLAB's own documentation](#) is also extensive and extremely helpful. It includes descriptions of how to call functions as well as usage examples.

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### Student Questions

Allow students to ask questions about their own work or previous lessons, and encourage other students to answer them. If no students answer, instructors may then answer.

### Review Questions

Instructors can use the below questions to test the students' understanding.

- Give an example of an anonymous numeric function.

- `func = @(x) x + 3;`

- How do you define new symbols in MATLAB?

- `syms`

- What is the difference between symbolic and numeric pi?

- Numeric pi is an approximation, symbolic pi is pi

Which is *generally* faster, symbolic or numeric computation?

- Numeric

If I have already called `syms x`, how do I define the cosine function symbolically?

- `func = cos(x);`

- What function do I use to transfer a symbolic function to a numeric one?

- `matlabFunction`

- How do I convert a symbolic scalar to a numeric one?

- `double`

What does it mean when a function uses the `./` operator?

- It supports element-wise matrix division

- If I need to take the partial derivative of a function, should I define it numerically or symbolically?

- Symbolically

Write an anonymous functions which calls another function named `mystery` and multiples it by `y`. Pass a value through to `mystery`, but divide it by two before passing.

- `function = @(mystery_value,y) mystery(mystery_value / 2) * y;`

- Pick an appropriate name for the van Der Waals Equation of State if it is defined symbolically.

- `sym_VDW`, `VDW_symbolic`, etc.

- Which functions do you use to calculate symbolic and numeric integrals in MATLAB?

- `int` and `integral`, respectively

`vpa` or variable precision algebra is essentially a black-box implementation of what technique?

- Iterative solving

- What should you write before syntactically correct code in order to solidify your concept of the workflow?

- Pseudocode

- When solving with iteration, should we use Numeric or Symbolic functions?

- Numeric