

Matlab Homework 1a

In the online book:

- Do the “Challenge Activities” of: 1.1-3 and 2.1,2,4-7
- Do the “Participation Activities” of: 3.1-4,8 and 13.4

Matlab Homework 1b

All work is to be completed using the Matlab program *only!* The homework problems closely follow the lecture ones. You should carefully read the corresponding posted lesson parts *before* starting the homeworks.

The TAs and Instructor will refuse to help you if you come to them with problems before you have carefully read the corresponding lesson.

Before starting this homework, you must run 'Secure Shell Client' in the 'Start' menu, 'Quick Connect' to host 'wolf' and log in using your COE username and password. Then run the command `~dommelen/gethw1` to create the `hw1` folder. Exit the Secure Shell Window using 'exit'. In Matlab, select the created `hw1` folder (double-click it). Put the solution of question 1 in file `q1.m`, question 2 in `q2.m`, etcetera.

To test whether the solution for question 1 works, run the command

```
q1
```

in the Matlab command window. (Don't forget to save `q1.m` first.) Fix any problems. Then **publish** the result to pdf file `q1.pdf` using

```
publish q1.m pdf
```

Print `q1.pdf` out (it should be in the `html` folder) and include it as the first part of your homework solution. (If you do not manage to create `q1.pdf`, print out `q1.m` for a 50% credit reduction.)

Normally speaking, each Matlab line in your solution must be preceded by an explanatory comment.

The grader must be able to figure out easily what number answers what. So, in addition to comments, use `disp` commands where needed.

Do the same as above for the other homework questions.

1. Use Matlab to evaluate:

(a) $2 + \frac{6}{4}$.

(b) $\frac{2+6}{4}$.

(c) 65 F in degrees Centigrade.

(d) The circumference of a circle of radius 3.

(e) The number of molecules in a mole, using exponential form.

(f) $\cos(10^2\pi)$, and check whether the answer is correct.

(g) $\cos(10^{20}\pi)$, and check whether the answer is correct.

(h) The tan of 45 degrees, and check whether the answer is correct.

(i) $\arccos(-1)$, and check whether the answer is correct.

(j) Euler's number e . Print it out only *after* giving it its value. Check whether the answer is correct.

2. Define a function `circleArea` so that `circleArea(r)` returns the area of a circle of radius `r`. Use the function with arguments 1, 2, `r`, and `x`, where `r` is a variable whose value is 1 and `x` is a variable whose value is 2. Check that in each case, you get the correct area.

3. Define a function `coneVolume` so that `coneVolume(r,h)` returns the volume of a cone whose base is a circle of radius `r` and whose height is `h`. Use the function with arguments (1,3), (3,1), and (2,7). Check that in each case, you get the correct volume.