

# Erratalist, Programming for Computations - Matlab/Octave

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## 0.1 Page 94, Section 4.1.3

The number of time points is one too many compared to the number stated in eqn. (4.8), so the text

Note that we need to compute  $N_t + 1$  new values  $N^1, \dots, N^{N_t+1}$ . A total of  $N_t + 2$  values are needed in an array representation of  $N^n, n = 0, \dots, N_t + 1$ .

should be replaced by

Note that we need to compute  $N_t$  new values  $N^1, \dots, N^{N_t}$ . A total of  $N_t + 1$  values are needed in an array representation of  $N^n, n = 0, \dots, N_t$ .

Also, the corresponding code `growth1.m` suffers from the same error. So, the code lines

```
t = linspace(0, (N_t+1)*dt, N_t+2);  
N = zeros(N_t+2, 1);
```

should be replaced by

```
t = linspace(0, N_t*dt, N_t+1);  
N = zeros(N_t+1, 1);
```

Furthermore, after the code on p. 95, there is a comment in parenthesis that should now be skipped. It reads

(or to be absolutely precise, the last time point to be computed according to our set-up above is  $t_{N_t+1} = 20.5$ )

Finally, for the same reason, the plots in Figs. 4.4 - 4.6 show a graph that goes slightly outside the domain specified in the example, i.e. beyond  $t = 20$ . These plots should end at  $t = 20$ .

## 0.2 Page 106, Section 4.2.3

In the program `SIR1.m`, there is a typo in the comment of the code line

```
N_t = floor(D*24/dt);    % Corresponding no of hours
```

It should be replaced by

```
N_t = floor(D*24/dt);    % Corresponding no of time steps
```

## 0.3 Page 118, Section 4.2.6

In the program `demo_SIR.m`, there is a typo in the comment of the code line

```
N_t = floor(D*24/dt);    % Corresponding no of hours
```

It should be replaced by

```
N_t = floor(D*24/dt);    % Corresponding no of time steps
```

## 0.4 Page 32, Section 2.2

The line starting

It that case, ...

should be changed into

In that case, ...

## 0.5 Page 80, Exercise 3.4

The filename `integrate_sine.pdf` has wrong extension pdf. The filename should be `integrate_sine.m`.

## 0.6 Page 99, Section 4.1.6

In the middle of the page, the line

...so there is now ...

should be changed into

...so there is no ...

### 0.7 Page 180, Section 6.1.1

In the program `brute_force_root_finder_flat.m`, the `if` test is insufficient when `y` values are zero. The branch

```
if y(i)*y(i+1) < 0
    ...
    ...
```

should be followed by

```
elseif y(i) == 0
    root = x(i);
    break; % Jump out of loop
end
```

### 0.8 Page 180, Section 6.1.1

In the program `brute_force_root_finder.m`, the `if` test is insufficient when `y` values are zero. The branch

```
if y(i)*y(i+1) < 0
    ...
    ...
```

should be followed by

```
elseif y(i) == 0
    root = x(i);
    roots = [roots; root];
end
```

### 0.9 Page 42, Exercise 2.14

In the second line, there is a typo, i.e.

...evenly distributed from 0 and 10 ...

should be changed into

...evenly distributed between 0 and 10 ...

### 0.10 Page 80, Exercise 3.4

In task a), there is an `s` too many, so the line

... two numerical methods approximates ...

should be changed into

... two numerical methods approximate ...

### **0.11 Page 83, Exercise 3.11**

In task a), in the interval given for  $x$ , the left bracket is wrong, i.e.

... ] ...

should be changed into

... [ ...

### **0.12 Page 156, Section 5.1.1**

In the beginning of the paragraph, there is a typo, i.e.

... call a cell ...

should be changed into

... called a cell ...

### **0.13 Page vi, Preface**

The name Kristen Nygaard is with one g too many, i.e.

... Kristen Nyggaard ...

should be changed into

... Kristen Nygaard ...

## **1 Acknowledgements**

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