

General Assignment Template

Leo Duncan
ldun202, 657579290

xxth Month 202x

1 General Math

Basic math examples for convenient copy-pasting

1.1 (a)

Basic multiline equation example.

$$\begin{aligned} a &= b + c \\ &= (b + c) \end{aligned}$$

1.2 (b)

Vectors and matrices.

Column vector square brackets: $\mathbf{x} = \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$, round brackets: $\vec{v} = \begin{pmatrix} 4 \\ 5 \\ 6 \\ 7 \end{pmatrix}$.

Row vector square brackets: $\mathbf{u} = [1 \ 2 \ 3]$;

Round brackets: $\vec{w} = (4 \ 5 \ 6 \ 7)$.

Matrix $A = \begin{bmatrix} a & b & c & d \\ e & f & g & h \\ i & j & k & l \end{bmatrix}$.

Another example $B = \left[\begin{array}{ccc|c} a & b & c & d \\ e & f & g & h \\ i & j & k & l \end{array} \right]$.

1.3 (c)

Sums, limits, integration

$$\sum \frac{1}{k + \sqrt{k}}$$

$$\sum_{k=2}^{\infty} \frac{3^k - 1}{4^k}$$

$$\lim_{k \rightarrow \infty} \frac{k^2 + k + 1}{2k^2}$$

$$\int_{-1}^1 e^x dx$$

1.4 (d)

Using `\frac` and `\dfrac`.

Using `\frac` $\frac{k^2+1}{k^3+1}$ and using `\dfrac` $\frac{k^2+1}{k^3+1}$ and using `\tfrac` $\frac{k^2+1}{k^3+1}$.

Note that when in "big" equation environment, `$$`, they give the same result.
Avoid using `\dfrac` unless necessary.

2 Graphics

Pictures and everything so exciting

Here is an example of an image with a caption.

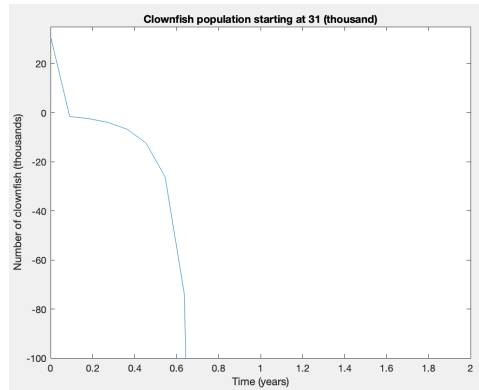
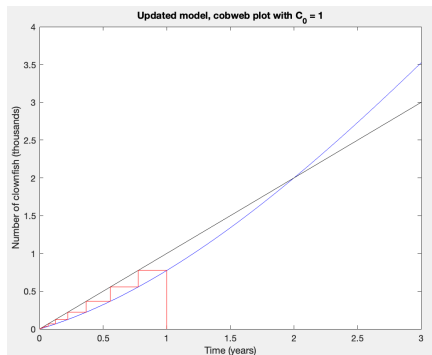
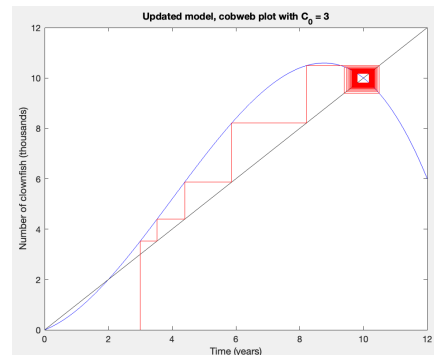


Figure 1: Clownfish model starting at population 31 (thousand).

Here is an example of two images side-by-side, with captions.



(a) Cobweb plot $C_0 = 1$



(b) Cobweb plot $C_0 = 3$

Figure 2: Updated model cobweb plots.

3 Tables

Yep, tables, as the title would suggest

4 Code

Code code code code code

Z_1	Z_0
0	0
0	1
1	0
1	1

	QA/L1	QB/L2	QC/L3	QD/L4
Starting State	0	1	0	1
After 1 clock pulse	1	0	1	0
After 2 clock pulses	1	1	0	1
After 3 clock pulses	1	1	1	0

```

1 Seq = randi(2,1,1000); % generate random sequence of coin flips
2 k = 0;
3
4 % while-loop that runs until the desired sequence, THH, is found
5 while (Seq(k+1)~=2 || Seq(k+2)~=1 || Seq(k+3)~=1)
6     k = k + 1;
7 end
8
9 disp(k) % output how many flips before the sequence THH

```

5 Academic Writing

How to format big chunks of writing

6 Bibliography

Referencing, footnotes, etc