

HW #4: Writing scripts in MATLAB

Write a simple script in MATLAB to:

1. Calculate the beam deflection at given number of points **(given to you)** along the beam from $x=0$ until the total length of the beam by using the given formula.
2. Plot the deflection of the beam with respect to x **(by using determined plot specifications for you)**.

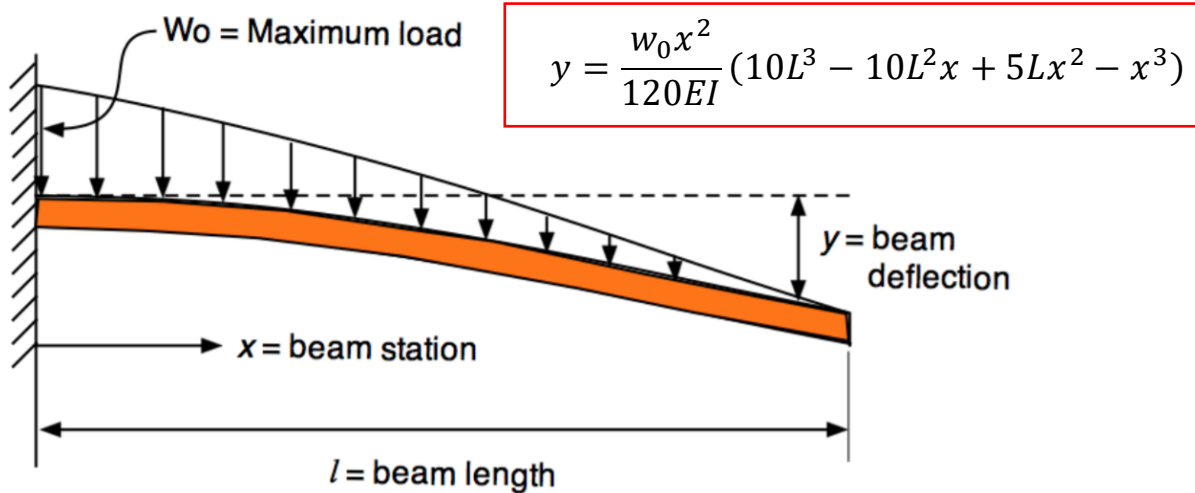
You must add x-label, y-label and legend to your graphs!

3. Find the coefficients of equation of rotation angle of the beam.

$$\text{Rotation of a beam: } \left[\theta = \frac{dy}{dx} \right]$$

4. Write the equation of rotation of beam **“as comment”** in your script.

- The formula to estimate the deflection is:



Use these constants

Maximum load at $x=0$	(w_0)	6000	N/m
Elastic Modulus	(E)	200000	N/mm ²
Length of beam	(L)	2	m
Moment of Inertia	(I)	$I = \frac{bh^3}{12}$	m ⁴
Width of beam:	(b)	200	mm
Height of beam	(h)	500	mm

HW #4: Writing scripts in MATLAB

REMARKS:

- This is an individual homework!
- See next page for your number of points to calculate deflection
i.e. $x=[0: \text{interval with respect to given numbers: beam length}]$ or “linspace”
function
- Please see below for specifications of your graph.
 - o You should write your script, so that when it start it should give the defined graph properties

SAVE YOUR M.FILE ONLY WITH YOUR STUDENT NUMBER AND UPLOAD IT TO:

<https://www.dropbox.com/request/0YBMIJT21VHaGPfkbHcK>

until 18.12.2019 – 20.00

DO NOT SEND YOUR SCRIPT VIA E-MAIL (WILL NOT BE ACCEPTED)

	Student Number	Name	Surname	Number of points to calculate deflections	Plot Specifications				
					Line Style	Line Color	Line Width	Marker Symbol	Marker Size
1	215191339	AYDANUR	KARADUMAN	150	Solid Line	green	1	Plus	7
2	216501946	MUHAMMED ALİ	YILMAZ	1200	No line	black	1.75	Circle	5
3	216502950	BEYZANUR	ÇABUK	1400	Solid Line	magenta	2	Plus	6
4	216520940	MUSTAFA	KÖPRÜLÜ	1400	Dashed Line	red	1.25	Asterisk	6
5	216530583	EDİZ	KAÇAR	90	Solid Line	red	2	Plus	7
6	216561805	RAMAZAN	ÖZBOLAT	3000	Dashed Line	black	3.5	Asterisk	7
7	216590836	ELİF	KAP	100	Solid Line	red	1	Plus	2
8	216590929	YUSUF BİLAL	BODUR	150	Dotted Line	green	3.75	Cross	6
9	217272681	KHALID	AHMED	1600	Dotted Line	blue	1.5	Cross	7
10	217412079	ENES	ŞENGÜL	200	Dashed Line	black	1.25	Asterisk	8
11	217412487	HALİL İBRAHİM	KARAOĞLU	1800	No line	green	1.75	Circle	8
12	217420745	ASMAA	AKRAICHE	500	Dashed Line	red	2.25	Asterisk	7
13	217470974	AYŞE MİNE	ULUSINAN	250	Dotted Line	magenta	1.5	Cross	2
14	217471203	EMRULLAH BERK	LADİKLİOĞLU	120	No line	black	3	Diamond	3
15	217471700	ALİ FUAT	TULUMCU	90	Dashed Line	magenta	3.5	Asterisk	4
16	217472031	MELİH BAHA	DORUK	300	No line	red	1.75	Circle	3
17	217472095	AHMET	ASLAN	200	Dashed Line	blue	1.25	Asterisk	3
18	217531557	BURAK	ÖZTÜRK	500	No line	magenta	3	Circle	7
19	217531742	ALPEREN	TURAKOĞLU	50	Solid Line	blue	1	Plus	3
20	218151062	ABDALAH MOHAMED RAMADAN	MAHDY	300	Dotted Line	green	1.5	Cross	4
21	218182249	ISMAYİL	GARAYEV	130	Solid Line	magenta	3.25	Plus	4
22	218191876	EŞREF EMRE	KOCA	350	Solid Line	blue	2	Plus	4
23	218202001	MUHAMMET EREN	ATALA	100	Dotted Line	red	3.75	Cross	5
24	218212550	KHALED IBRAHİM MOSTAFA	ELTATAWI	550	Solid Line	red	3.25	Plus	8
25	218222963	NECMETTİN EMİN	KIRKAN	2000	Solid Line	black	2	Plus	2
26	218251322	SİNAN	DUMANSIZ	3200	Dotted Line	magenta	3.75	Cross	8
27	218271190	HÜSEYİN KEREM	MİCAN	400	Dashed Line	green	2.25	Asterisk	5
28	218290022	ALAAEDDINE	ZOObI	140	Dashed Line	blue	3.5	Asterisk	5
29	218290060	AIMEN	DADDI	3400	No line	red	4	Square	2
30	218311205	CAMPBELL TINASHE	NYAKUDYA	600	Dotted Line	blue	2.5	Cross	8
31	218320610	MURAT	TÜZÜN	120	No line	blue	4	Circle	6
32	218320782	MEHMET SELMAN	BAYSAN	60	Dashed Line	green	1.25	Asterisk	4
33	218322601	EBRAR	İNAN	160	No line	black	4	Diamond	7
34	218331860	AHMET FARUK	GÜZEL	600	Dashed Line	blue	3.5	Asterisk	2
35	218332274	ABDÜLSAMET	KARAKAŞ	450	Dotted Line	black	2.5	Cross	6
36	218333201	KEREM	KOSİF	60	No line	green	3	Circle	2
37	218340688	MUHAMMED BİLAL	BAYRAK	2200	Dashed Line	magenta	2.25	Asterisk	3
38	218342061	AYŞE BEYZA	DURSUN	1000	Dotted Line	green	3.75	Cross	3
39	218350277	SENA	ULUÇAM	2400	Dotted Line	red	2.5	Cross	4
40	218352048	MERT	HIRKA	80	Solid Line	black	3.25	Plus	3
41	218570619	NASSER	MAROUF	70	Dotted Line	black	1.5	Cross	5
42	219252073	MUSTAFA HASAN JASIM	AL-TAWEEL	100	Dashed Line	blue	2.25	Asterisk	8
43	518501559	ŞEVVAL	BOZKURT	2600	No line	blue	3	Square	5
44	519490768	TAHA METE	YAZICI	1100	No line	black	4	Circle	4