

**NAME:                   SAMPSON SOPHIA**

**MATRIC NO:       19/ENG08/009**

**DEPARTMENT: BIOMEDICAL ENGINEERING**

**COURSE CODE: ENG 282**

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### QUESTION 1

a. Tank initially: 1200 gal of water with 150 lb of salt

Input rate of salt:  $M_{in} = 50$  gal/min

1 gal contains  $(1 + \sin t)$  lb

Output rate of salt:  $M_{out} = 30$  gal/min

Amount of salt present at any time as  $m$ , its time rate of change is given as:

$$\frac{dM}{dt} = M_{in} - M_{out}$$

$$M_{in} = 50 \frac{\text{gal}}{\text{min}} \times (1 + \sin t) \frac{\text{lb}}{\text{gal}} = 50(1 + \sin t) \frac{\text{lb}}{\text{min}}$$

$$M_{out} = \frac{30}{1200} = 0.025 = 2.5\% \text{ of } m$$

$$\frac{dM}{dt} \frac{\text{lb}}{\text{min}} = 50(1 + \sin t) \frac{\text{lb}}{\text{min}} - 2.5\% m \frac{\text{lb}}{\text{min}}$$

$$\frac{dM}{dt} = 50(1 + \sin t) - 0.025m$$

$$\frac{dM}{dt} + 0.025m = 50(1 + \sin t) \quad \text{--- Ordinary Differential Equation}$$

b. Comparing ODE to  $\frac{dy}{dx} + Py = Q$

$$P = 0.025$$

$$\int P dt = 0.025t$$

$$\text{Integrating Factor} = e^{\int P dt} = e^{0.025t}$$

$$m \cdot (\text{IF}) = \int Q \cdot (\text{IF}) dt$$

$$Q = 50(1 + \sin t)$$

$$\text{IF} = e^{0.025t}$$

$$m \cdot (IF) = \int 50(1 + \sin t) \cdot e^{0.025t} dt$$

$$m \cdot (IF) = 50 \int e^{0.025t} \cdot (1 + \sin t) dt$$

$$m \cdot (IF) = 50 \int e^{0.025t} + \sin t \cdot e^{0.025t} dt$$

$$m \cdot (IF) = 50 \left( \int e^{0.025t} + \int \sin t \cdot e^{0.025t} dt \right)$$

$$\int e^{0.025t} = \frac{e^{0.025t}}{0.025} = 40e^{0.025t}$$

$$\int \sin t \cdot e^{0.025t} \quad \langle \text{Integrate by parts} \rangle$$

$$\int u dv = uv - \int v du$$

$$u = e^{0.025t}$$

$$dv = \sin t$$

$$du = 0.025e^{0.025t}$$

$$v = -\cos t$$

$$\int u dv = -\cos t \cdot e^{0.025t} - \int -\cos t \times 0.025 e^{0.025t}$$

$$= -\cos t \cdot e^{0.025t} + 0.025 \int \cos t \cdot e^{0.025t}$$

$$\int \cos t \cdot e^{0.025t} \quad \langle \text{Integrate by parts} \rangle$$

$$\int u dv = uv - \int v du$$

$$u = e^{0.025t}$$

$$dv = \cos t$$

$$du = 0.025e^{0.025t}$$

$$v = \sin t$$

$$\int u dv = \sin t \cdot e^{0.025t} - \int \sin t \times 0.025 e^{0.025t}$$

$$= \sin t \cdot e^{0.025t} - 0.025 \int \sin t \cdot e^{0.025t}$$

$$\int \sin t \cdot e^{0.025t} = -\cos t \cdot e^{0.025t} + 0.025 \left( \sin t \cdot e^{0.025t} - 0.025 \int \sin t \cdot e^{0.025t} \right)$$

$$= -\cos t \cdot e^{0.025t} + 0.025 \sin t \cdot e^{0.025t} - 6.25 \times 10^{-4} \int \sin t \cdot e^{0.025t}$$

Collect like terms.

$$\int \sin t \cdot e^{0.025t} + 6.25 \times 10^{-4} \int \sin t \cdot e^{0.025t} = -\cos t \cdot e^{0.025t} + 0.025 \sin t \cdot e^{0.025t}$$

$$(1 + 6.25 \times 10^{-4}) = 1.000625 \approx 1$$

$$\int \sin t \cdot e^{0.025t} = 0.025 \sin t \cdot e^{0.025t} - \cos t \cdot e^{0.025t}$$

$$m \cdot \text{C.I.F} = 50(40e^{0.025t} + 0.025 \sin t \cdot e^{0.025t} - \cos t \cdot e^{0.025t}) + C$$

$$m \cdot \text{C.I.F} = 2000e^{0.025t} + 1.25 \sin t \cdot e^{0.025t} - 50 \cos t \cdot e^{0.025t} + C$$

$$m = 2000e^{0.025t} + 1.25 \sin t \cdot e^{0.025t} - 50 \cos t \cdot e^{0.025t} + C$$

$$m = 2000 + 1.25 \sin t - 50 \cos t + Ce^{-0.025t}$$

When  $t=0$ ,  $m=150$

Substitute values

$$150 = 2000 + 1.25 \sin(0) - 50 \cos(0) + Ce^{-0.025(0)}$$

$$150 = 2000 + 0 - 50 + C$$

$$C = 150 - 2000 + 50 - 0$$

$$C = -1800$$

$$m = 2000 + 1.25 \sin t - 50 \cos t - 1800e^{-0.025t}$$

- c. 1 hr = 60 mins
- 7.5 hr = 60 x 7.5 = 450 mins
- 0:0.5:450

Matlab program

ode represents ordinary differential equation  
cond represents condition  
Mn = subs (s,t) means substitute t into s

# MATLAB

1. commandwindow

2. clearvars

3. clc

4. closeall

5. syms m(t)

~~6. ode = diff(m,t) + (0.025 \* m) == (50 \* (1 + sin(t)));~~

6. ode = diff(m,t) + (0.025 \* m) == (50 \* (1 + sin(t)));

7. cond = m(0) == 150;

8. s = dsolve(ode, cond);

9. t = 0:0.5:450;

10. Mn = subs(s,t);

11. plot(t, Mn)

12. xlabel('Time (min)')

13. ylabel('Amount of salt present in tank (m)')

14. grid on

15. grid minor

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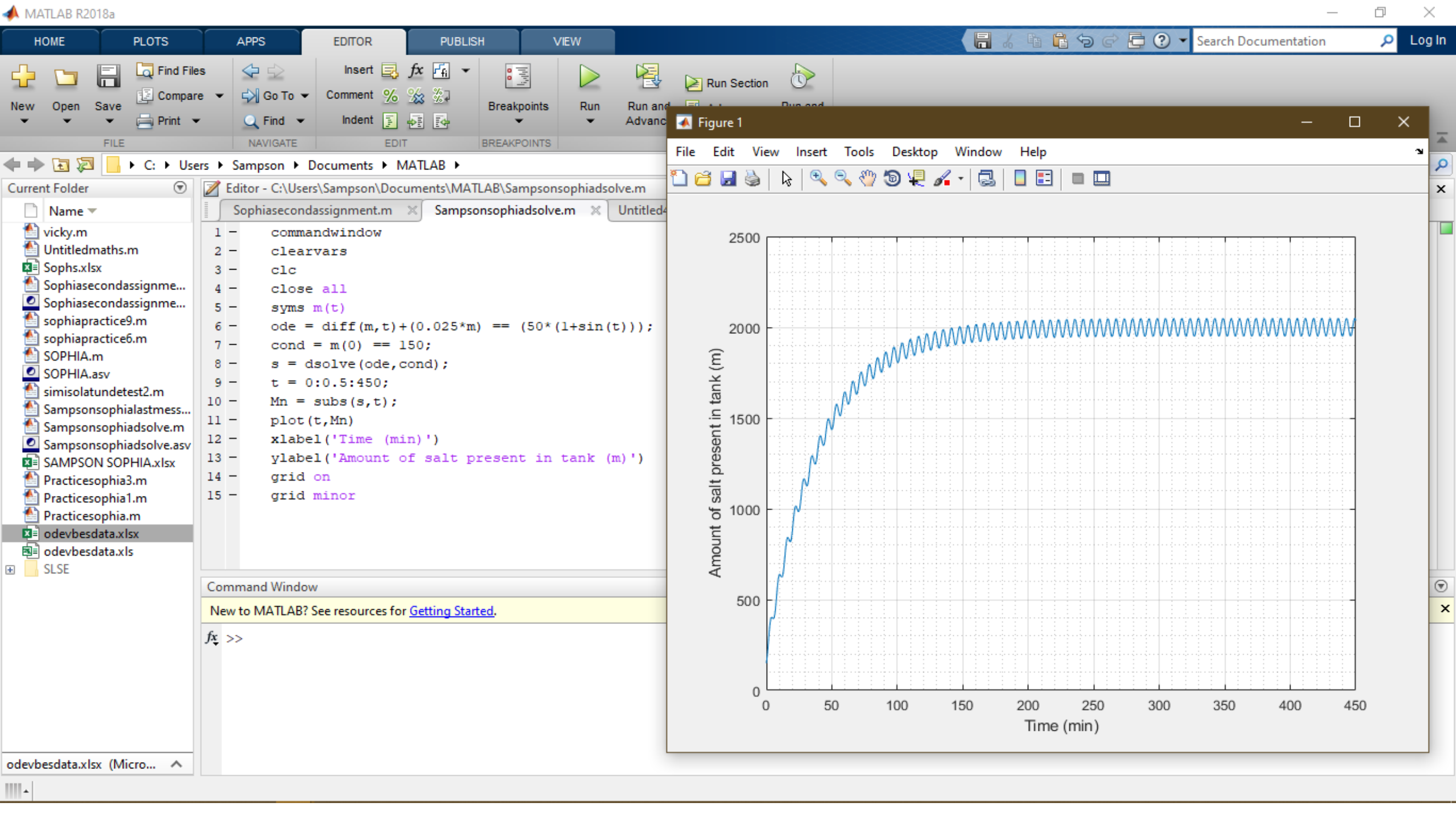
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- SLSE

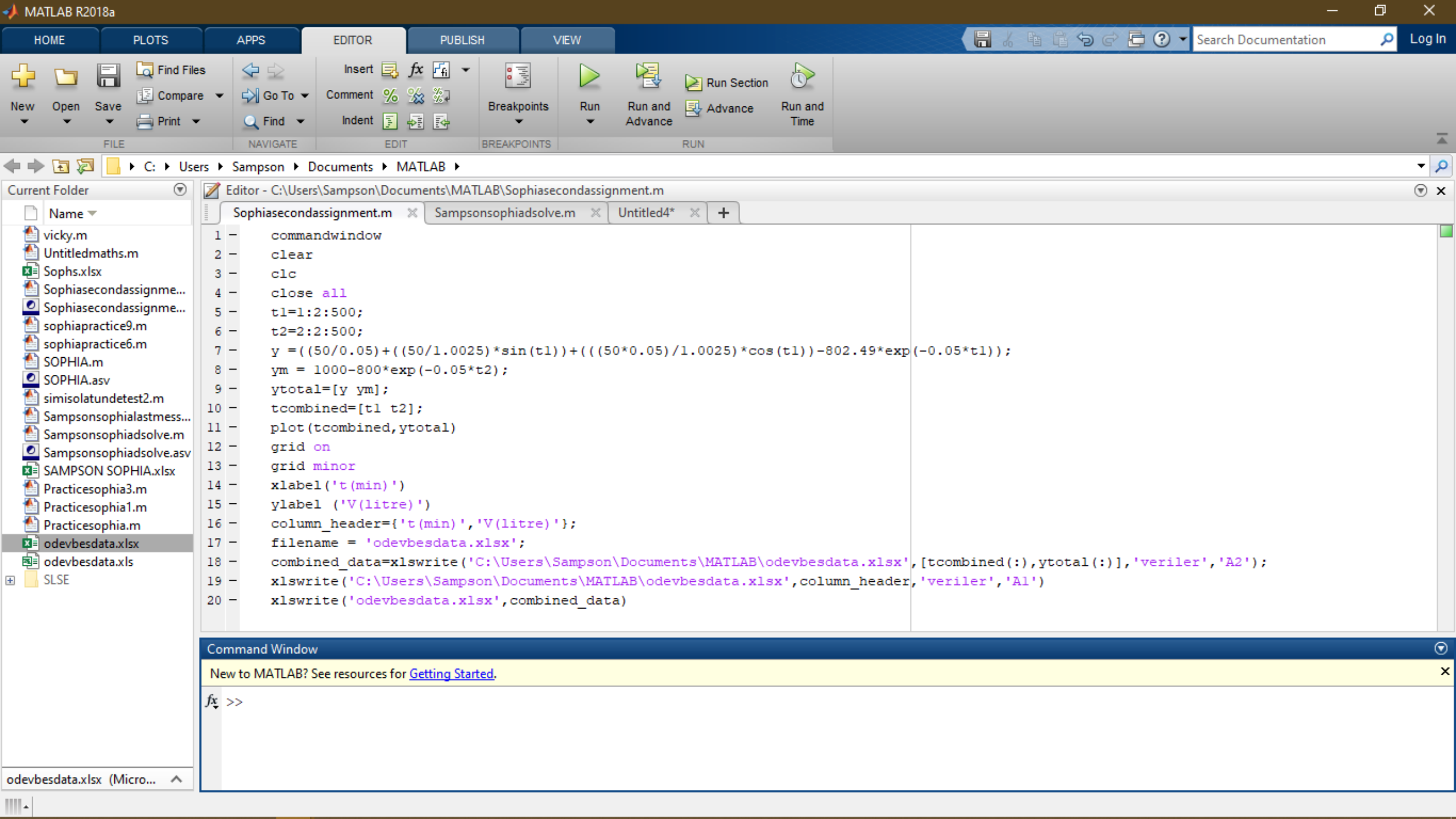
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1 - commandwindow
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4 - close all
5 - syms m(t)
6 - ode = diff(m,t)+(0.025*m) == (50*(1+sin(t)));
7 - cond = m(0) == 150;
8 - s = dsolve(ode,cond);
9 - t = 0:0.5:450;
10 - Mn = subs(s,t);
11 - plot(t,Mn)
12 - xlabel('Time (min)')
13 - ylabel('Amount of salt present in tank (m)')
14 - grid on
15 - grid minor
```

Command Window

New to MATLAB? See resources for [Getting Started](#).

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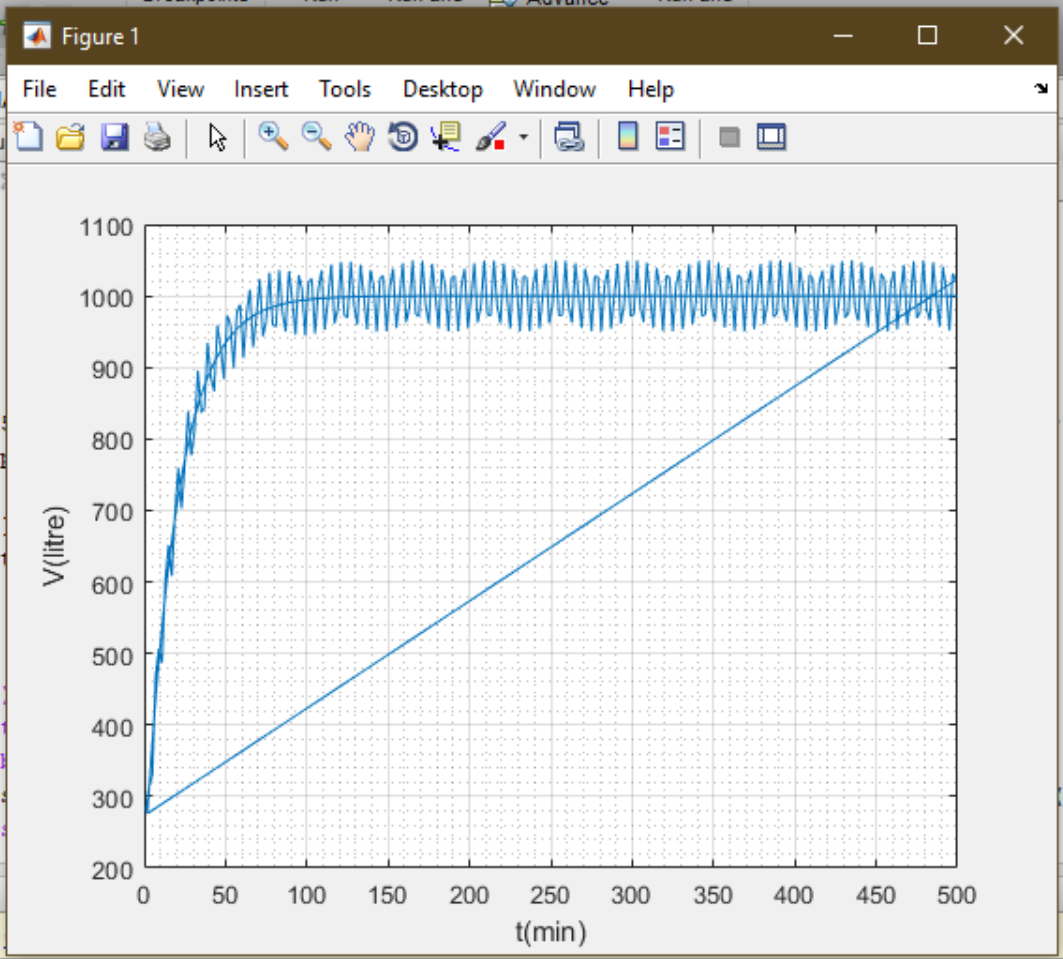
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- Practicesophia.m
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- SLSE

```

1 - commandwindow
2 - clear
3 - clc
4 - close all
5 - t1=1:2:500;
6 - t2=2:2:500;
7 - y = ((50/0.05)+((
8 - ym = 1000-800*exp
9 - ytotal=[y ym];
10 - tcombined=[t1 t2];
11 - plot(tcombined,y
12 - grid on
13 - grid minor
14 - xlabel('t(min)')
15 - ylabel('V(litre)')
16 - column_header={'
17 - filename = 'odevbes
18 - combined_data=xls
19 - xlswrite('odevbes

```



Command Window

New to MATLAB? See resources for

fx >>

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(:,ytotal(:)],'veriler','A1');

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1	t (min)	V (litre)																		
2	1	279.9639141																		
3	2	276.1300656																		
4	3	313.8600512																		
5	4	345.0153975																		
6	5	327.9008995																		
7	6	407.3454235																		
8	7	469.1423218																		
9	8	463.7439632																		
10	9	506.5921772																		
11	10	514.7754722																		
12	11	487.1397601																		
13	12	560.9506911																		
14	13	604.2824061																		
15	14	602.731757																		
16	15	651.4693903																		
17	16	640.5368287																		
18	17	608.3675988																		
19	18	674.7442722																		
20	19	699.5849662																		
21	20	705.6964471																		
22	21	759.5410081																		
23	22	733.703133																		
24	23	702.3678918																		
25	24	759.0446305																		

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26	25	765.9535082																		
27	26	781.9745656																		
28	27	838.9333051																		
29	28	802.7224288																		
30	29	776.7952625																		
31	30	821.4958719																		
32	31	811.802773																		
33	32	838.4827856																		
34	33	895.7196755																		
35	34	853.8531808																		
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40	39	934.5610206																		
41	40	891.7317734																		
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45	44	911.3574733																		
46	45	959.1672847																		
47	46	919.792925																		

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49	48	927.4256374																		
50	49	883.9311563																		
51	50	934.3320011																		
52	51	972.6188915																		
53	52	940.5811374																		
54	53	960.7600163																		
55	54	946.2355898																		
56	55	898.8906087																		
57	56	951.3519499																		
58	57	977.578421																		
59	58	955.981424																		
60	59	987.8325226																		
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65	64	967.3902368																		
66	65	1008.719796																		
67	66	970.4934661																		
68	67	927.8846345																		
69	68	973.301384																		
70	69	971.2767986																		

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75	74	980.2211788																		
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79	78	983.8064708																		
80	79	960.1636951																		
81	80	985.3474889																		
82	81	956.5397313																		
83	82	986.7418597																		
84	83	1036.268987																		
85	84	988.0035385																		
86	85	977.3164639																		
87	86	989.1451528																		
88	87	950.074815																		
89	88	990.1781281																		
90	89	1034.796558																		
91	90	991.1128028																		
92	91	994.326365																		

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110	109	1035.848642																		
111	110	996.7305828																		
112	111	952.5073537																		
113	112	997.041709																		
114	113	994.8122118																		

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158	157	998.2055824																		

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169	168	999.8201061																		
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171	170	999.8372253																		
172	171	1049.088878																		
173	172	999.8527154																		
174	173	986.9074984																		
175	174	999.8667314																		
176	175	961.4084781																		
177	176	999.8794135																		
178	177	1044.850544																		
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182	181	954.0747957																		
183	182	999.9106674																		
184	183	1037.019841																		
185	184	999.9191685																		
186	185	1014.871546																		
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188	187	950.3834422																		
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194	193	950.6326277																		
195	194	999.9509732																		
196	195	1013.331563																		
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Number: General, Text, Percentage, Currency, Accounting, Fraction, Decimals, Thousands Separator, Negative Numbers

Styles: Conditional Formatting, Format as Table, Cell Styles

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

SECURITY WARNING External Data Connections have been disabled Enable Content

C393

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
202	201	999.3675333																		
203	202	999.9671364																		
204	203	1045.622312																		
205	204	999.9702637																		
206	205	962.5721761																		
207	206	999.9730935																		
208	207	985.4479819																		
209	208	999.975654																		
210	209	1049.466404																		
211	210	999.9779708																		
212	211	973.3154147																		
213	212	999.9800672																		
214	213	972.6832627																		
215	214	999.981964																		
216	215	1049.366073																		
217	216	999.9836804																		
218	217	986.1807517																		
219	218	999.9852334																		
220	219	962.0913394																		
221	220	999.9866386																		
222	221	1045.330338																		
223	222	999.9879101																		
224	223	1000.14427																		

File Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do

Clipboard: Paste, Cut, Copy, Format Painter

Font: Calibri, 11, Bold, Italic, Underline, Text Color, Background Color

Alignment: Wrap Text, Merge & Center

Number: General, Currency, Percentage, Decimals

Styles: Conditional Formatting, Format as Table, Cell Styles

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

SECURITY WARNING External Data Connections have been disabled Enable Content

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
24	223	1000.14427																		
25	224	999.9890606																		
26	225	954.5167982																		
27	226	999.9901017																		
28	227	1037.681443																		
29	228	999.9910436																		
30	229	1014.09433																		
31	230	999.9918959																		
32	231	950.5636448																		
33	232	999.9926671																		
34	233	1027.029257																		
35	234	999.9933649																		
36	235	1026.920188																		
37	236	999.9939964																		
38	237	950.5472459																		
39	238	999.9945677																		
40	239	1014.222743																		
41	240	999.9950846																		
42	241	1037.600522																		
43	242	999.9955524																		
44	243	954.4692493																		
45	244	999.9959756																		
46	245	1000.282372																		

Clipboard: Paste, Cut, Copy, Format Painter

Font: Calibri, 11, Bold, Italic, Underline, Text Color, Background Color, Font Color, Font Size, Font Style

Alignment: Left, Center, Right, Justify, Merge & Center, Wrap Text

Number: General, Currency, Percentage, Thousand Separator, Accounting

Styles: Conditional Formatting, Format as Table, Cell Styles

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

**SECURITY WARNING** External Data Connections have been disabled. [Enable Content](#)

C393

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
246	245	1000.282372																		
247	246	999.9963586																		
248	247	1045.28482																		
249	248	999.9967051																		
250	249	962.0174832																		
251	250	999.9970187																		
252	251	986.3188523																		
253	252	999.9973024																		
254	253	1049.361164																		
255	254	999.9975591																		
256	255	972.5908472																		
257	256	999.9977914																		
258	257	973.4446807																		
259	258	999.9980016																		
260	259	1049.504987																		
261	260	999.9981917																		
262	261	985.3472118																		
263	262	999.9983638																		
264	263	962.6855316																		
265	264	999.9985195																		
266	265	1045.704947																		
267	266	999.9986604																		
268	267	999.2705153																		

Clipboard

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Font

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Styles

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SECURITY WARNING External Data Connections have been disabled [Enable Content](#)

C393

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
268	267	999.2705153																		
269	268	999.9987879																		
270	269	954.8985658																		
271	270	999.9989032																		
272	271	1038.263836																		
273	272	999.9990076																		
274	273	1013.251711																		
275	274	999.999102																		
276	275	950.7041574																		
277	276	999.9991875																		
278	277	1027.774471																		
279	278	999.9992648																		
280	279	1026.177122																		
281	280	999.9993348																		
282	281	950.4364815																		
283	282	999.9993981																		
284	283	1015.072476																		
285	284	999.9994554																		
286	285	1037.017159																		
287	286	999.9995072																		
288	287	954.1168991																		
289	288	999.9995541																		
290	289	1001.169719																		

File Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do

Clipboard: Paste, Cut, Copy, Format Painter

Font: Calibri, 11, Bold, Italic, Underline, Text Color, Background Color, Font Color, Font Size, Font Style

Alignment: Left, Center, Right, Justify, Merge & Center, Wrap Text

Number: General, Currency, Percentage, Thousand Separator, Accounting, Increase/Decrease Decimal

Styles: Conditional Formatting, Format as Table, Cell Styles

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

SECURITY WARNING External Data Connections have been disabled [Enable Content](#)

C393

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
290	289	1001.169719																		
291	290	999.9995965																		
292	291	1044.908342																		
293	292	999.9996349																		
294	293	961.452258																		
295	294	999.9996697																		
296	295	987.1737096																		
297	296	999.9997011																		
298	297	1049.222086																		
299	298	999.9997295																		
300	299	971.8582486																		
301	300	999.9997553																		
302	301	974.1993817																		
303	302	999.9997786																		
304	303	1049.614779																		
305	304	999.9997996																		
306	305	984.5059511																		
307	306	999.9998187																		
308	307	963.2802764																		
309	308	999.999836																		
310	309	1046.055151																		
311	310	999.9998516																		
312	311	998.387868																		

Clipboard: Paste, Cut, Copy, Format Painter

Font: Calibri, 11, Bold, Italic, Underline, Text Color, Background Color, Font Color, Paragraph Spacing, Bullets, Numbering, Merge & Center, Wrap Text

Alignment: Left, Center, Right, Justify, Indent, Decrease Indent, Increase Indent, Merge & Center

Number: General, Currency, Percentage, Thousand Separator, Accounting, Comma Separator, Fraction, Decimals

Styles: Conditional Formatting, Format as Table, Cell Styles

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

SECURITY WARNING External Data Connections have been disabled Enable Content

C393

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
312	311	998.387868																		
313	312	999.9998657																		
314	313	955.2862138																		
315	314	999.9998785																		
316	315	1038.826769																		
317	316	999.99989																		
318	317	1012.398182																		
319	318	999.9999005																		
320	319	950.854004																		
321	320	999.99991																		
322	321	1028.505449																		
323	322	999.9999185																		
324	323	1025.420847																		
325	324	999.9999263																		
326	325	950.3367199																		
327	326	999.9999333																		
328	327	1015.913387																		
329	328	999.9999397																		
330	329	1036.418488																		
331	330	999.9999454																		
332	331	953.7755722																		
333	332	999.9999506																		
334	333	1002.053663																		



File Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do

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Number: General, Currency, Percentage, Thousand Separator, Accounting

Styles: Conditional Formatting, Format as Table, Cell Styles

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

SECURITY WARNING External Data Connections have been disabled [Enable Content](#)

C393

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
334	333	1002.053663																		
335	334	999.9999553																		
336	335	1044.515043																		
337	336	999.9999595																		
338	337	960.896627																		
339	338	999.9999634																		
340	339	988.0303371																		
341	340	999.9999669																		
342	341	1049.065548																		
343	342	999.99997																		
344	343	971.1326275																		
345	344	999.9999729																		
346	345	974.9605018																		
347	346	999.9999755																		
348	347	1049.707515																		
349	348	999.9999778																		
350	349	983.6681816																		
351	350	999.9999799																		
352	351	963.8852941																		
353	352	999.9999818																		
354	353	1046.389805																		
355	354	999.9999836																		
356	355	997.5047153																		

Clipboard

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SECURITY WARNING External Data Connections have been disabled [Enable Content](#)

C393

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
356	355	997.5047153																		
357	356	999.9999851																		
358	357	955.6869599																		
359	358	999.9999865																		
360	359	1039.376707																		
361	360	999.9999878																		
362	361	1011.540019																		
363	362	999.999989																		
364	363	951.0185747																		
365	364	999.99999																		
366	365	1029.226881																		
367	366	999.999991																		
368	367	1024.65605																		
369	368	999.9999918																		
370	369	950.2520199																		
371	370	999.9999926																		
372	371	1016.748857																		
373	372	999.9999933																		
374	373	1035.807992																		
375	374	999.9999939																		
376	375	953.4483594																		
377	376	999.9999945																		
378	377	1002.936627																		

Veriler

Enter

Clipboard: Paste, Cut, Copy, Format Painter

Font: Calibri, 11, Bold, Italic, Underline, Text Color, Background Color, Font Color, Paragraph Spacing, Bullets, Numbered List, Merge & Center, Wrap Text

Alignment: Left, Center, Right, Indent, Decrease Indent, Increase Indent, Merge & Center

Number: General, Currency, Percentage, Thousand Separator, Accounting, Comma Separator, Fraction, Decimals

Styles: Conditional Formatting, Format as Table, Cell Styles

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

SECURITY WARNING External Data Connections have been disabled Enable Content

C393

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
378	377	1002.936627																		
379	378	999.999995																		
380	379	1044.10749																		
381	380	999.9999955																		
382	381	960.3529749																		
383	382	999.9999959																		
384	383	988.8904665																		
385	384	999.9999963																		
386	385	1048.893409																		
387	386	999.9999967																		
388	387	970.415849																		
389	388	999.999997																		
390	389	975.7292842																		
391	390	999.9999973																		
392	391	1049.784506																		
393	392	999.9999975																		
394	393	982.835379																		
395	394	999.9999978																		
396	395	964.5014927																		
397	396	999.999998																		
398	397	1046.709798																		
399	398	999.9999982																		
400	399	996.6222325																		

File Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do

Clipboard: Paste, Cut, Copy, Format Painter

Font: Calibri, 11, Bold, Italic, Underline, Text Color, Background Color, Font Color, Font Size, Font Style

Alignment: Left, Center, Right, Justify, Merge & Center, Wrap Text

Number: General, Currency, Percentage, Thousand Separator, Accounting, Increase/Decrease Decimal Places

Styles: Conditional Formatting, Format as Table, Cell Styles

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

SECURITY WARNING External Data Connections have been disabled Enable Content

C393

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
400	399	996.6222325																		
401	400	999.9999984																		
402	401	956.1014915																		
403	402	999.9999985																		
404	403	1039.914214																		
405	404	999.9999986																		
406	405	1010.678157																		
407	406	999.9999988																		
408	407	951.1984202																		
409	408	999.9999989																		
410	409	1029.939086																		
411	410	999.999999																		
412	411	1023.883465																		
413	412	999.9999991																		
414	413	950.1828545																		
415	414	999.9999992																		
416	415	1017.579028																		
417	416	999.9999993																		
418	417	1035.18623																		
419	418	999.9999993																		
420	419	953.1356939																		
421	420	999.9999994																		
422	421	1003.818634																		

Clipboard: Paste, Cut, Copy, Format Painter

Font: Calibri, 11, Bold, Italic, Underline, Text Color, Background Color, Font Color, Font Size, Paragraph Spacing, Bullets, Numbering, Merge & Center, Wrap Text

Alignment: Left, Center, Right, Justify, Indent, Decrease Indent, Increase Indent, Merge & Center

Number: General, Currency, Percentage, Thousand Separator, Accounting, Fraction, Date, Time, Text, Special

Styles: Conditional Formatting, Format as Table, Cell Styles

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

SECURITY WARNING External Data Connections have been disabled Enable Content

C393

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
422	421	1003.818634																		
423	422	999.9999995																		
424	423	1043.68608																		
425	424	999.9999995																		
426	425	959.8217169																		
427	426	999.9999996																		
428	427	989.7540498																		
429	428	999.9999996																		
430	429	1048.705921																		
431	430	999.9999996																		
432	431	969.7083189																		
433	432	999.9999997																		
434	433	976.5056521																		
435	434	999.9999997																		
436	435	1049.845877																		
437	436	999.9999997																		
438	437	982.0079388																		
439	438	999.9999998																		
440	439	965.1288007																		
441	440	999.9999998																		
442	441	1047.015139																		
443	442	999.9999998																		
444	443	995.7407959																		

Clipboard

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SECURITY WARNING External Data Connections have been disabled [Enable Content](#)

C393

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
444	443	995.7407959																		
445	444	999.9999998																		
446	445	956.529769																		
447	446	999.9999998																		
448	447	1040.439202																		
449	448	999.9999999																		
450	449	1009.812939																		
451	450	999.9999999																		
452	451	951.3935509																		
453	452	999.9999999																		
454	453	1030.641901																		
455	454	999.9999999																		
456	455	1023.103388																		
457	456	999.9999999																		
458	457	950.1292947																		
459	458	999.9999999																		
460	459	1018.403684																		
461	460	999.9999999																		
462	461	1034.553435																		
463	462	999.9999999																		
464	463	952.8377103																		
465	464	999.9999999																		
466	465	1004.69944																		

Clipboard: Paste, Cut, Copy, Format Painter

Font: Calibri, 11, Bold, Italic, Underline, Text Color, Background Color, Font Color

Alignment: Left, Center, Right, Justify, Merge & Center, Wrap Text

Number: General, Currency, Percentage, Thousand Separator, Accounting

Styles: Conditional Formatting, Format as Table, Cell Styles

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

SECURITY WARNING External Data Connections have been disabled Enable Content

C393

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
466	465	1004.69944																		
467	466	999.9999999																		
468	467	1043.250976																		
469	468	999.9999999																		
470	469	959.3030468																		
471	470	1000																		
472	471	990.6208409																		
473	472	1000																		
474	473	1048.503168																		
475	474	1000																		
476	475	969.0102792																		
477	476	1000																		
478	477	977.2893805																		
479	478	1000																		
480	479	1049.891626																		
481	480	1000																		
482	481	981.1861351																		
483	482	1000																		
484	483	965.7670351																		
485	484	1000																		
486	485	1047.305745																		
487	486	1000																		
488	487	994.8606926																		

Clipboard: Paste, Cut, Copy, Format Painter

Font: Calibri, 11, Bold, Italic, Underline, Text Color, Background Color, Font Color

Alignment: Left, Center, Right, Justify, Merge & Center, Wrap Text

Number: General, Currency, Percentage, Increase/Decrease Decimal

Styles: Conditional Formatting, Format as Table, Cell Styles

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

SECURITY WARNING External Data Connections have been disabled Enable Content

C393

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
486	485	1047.305745																		
487	486	1000																		
488	487	994.8606926																		
489	488	1000																		
490	489	956.971668																		
491	490	1000																		
492	491	1040.951516																		
493	492	1000																		
494	493	1008.944644																		
495	494	1000																		
496	495	951.6039132																		
497	496	1000																		
498	497	1031.335112																		
499	498	1000																		
500	499	1022.316071																		
501	500	1000																		
502																				
503																				
504																				
505																				
506																				
507																				
508																				