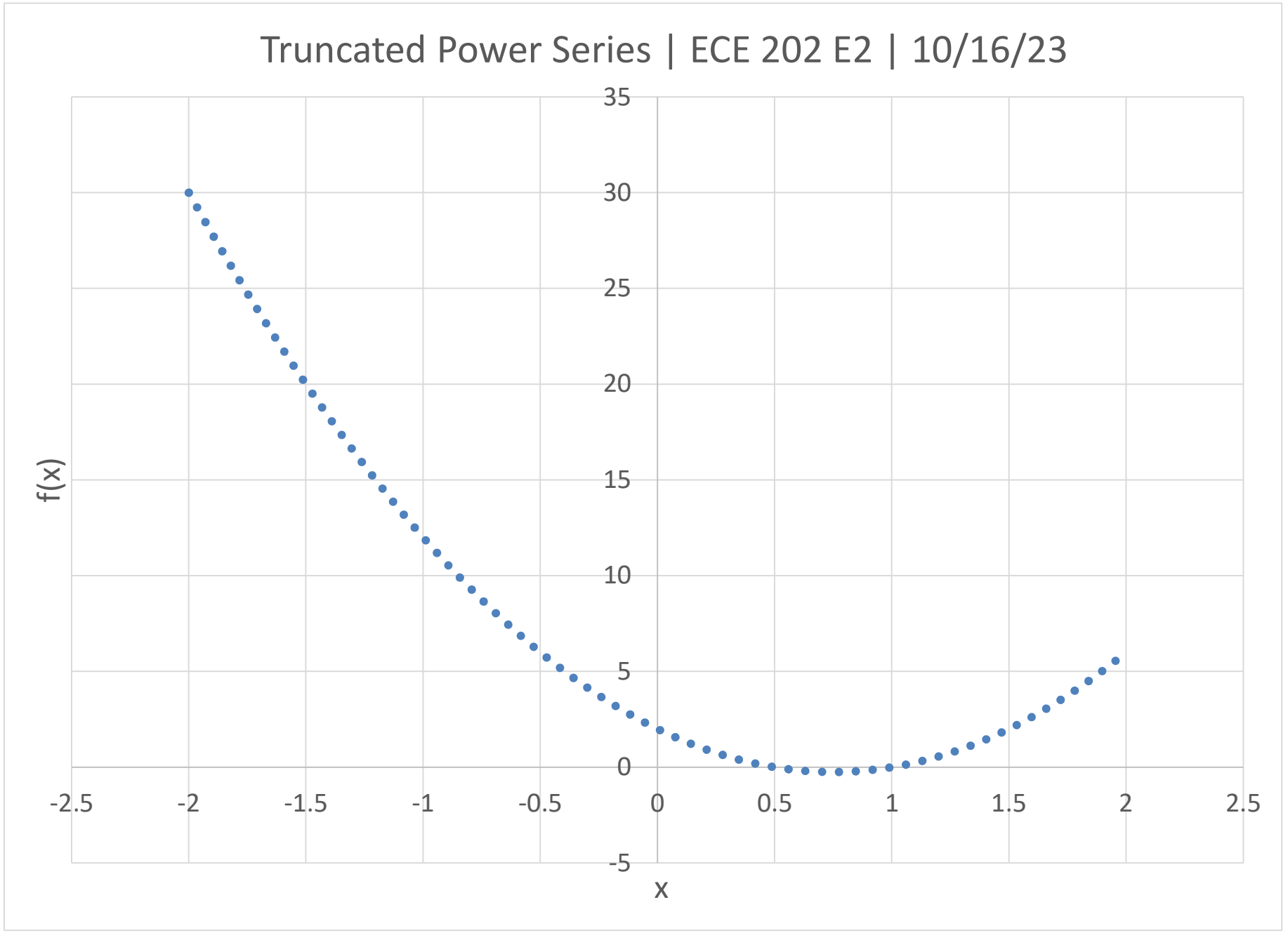
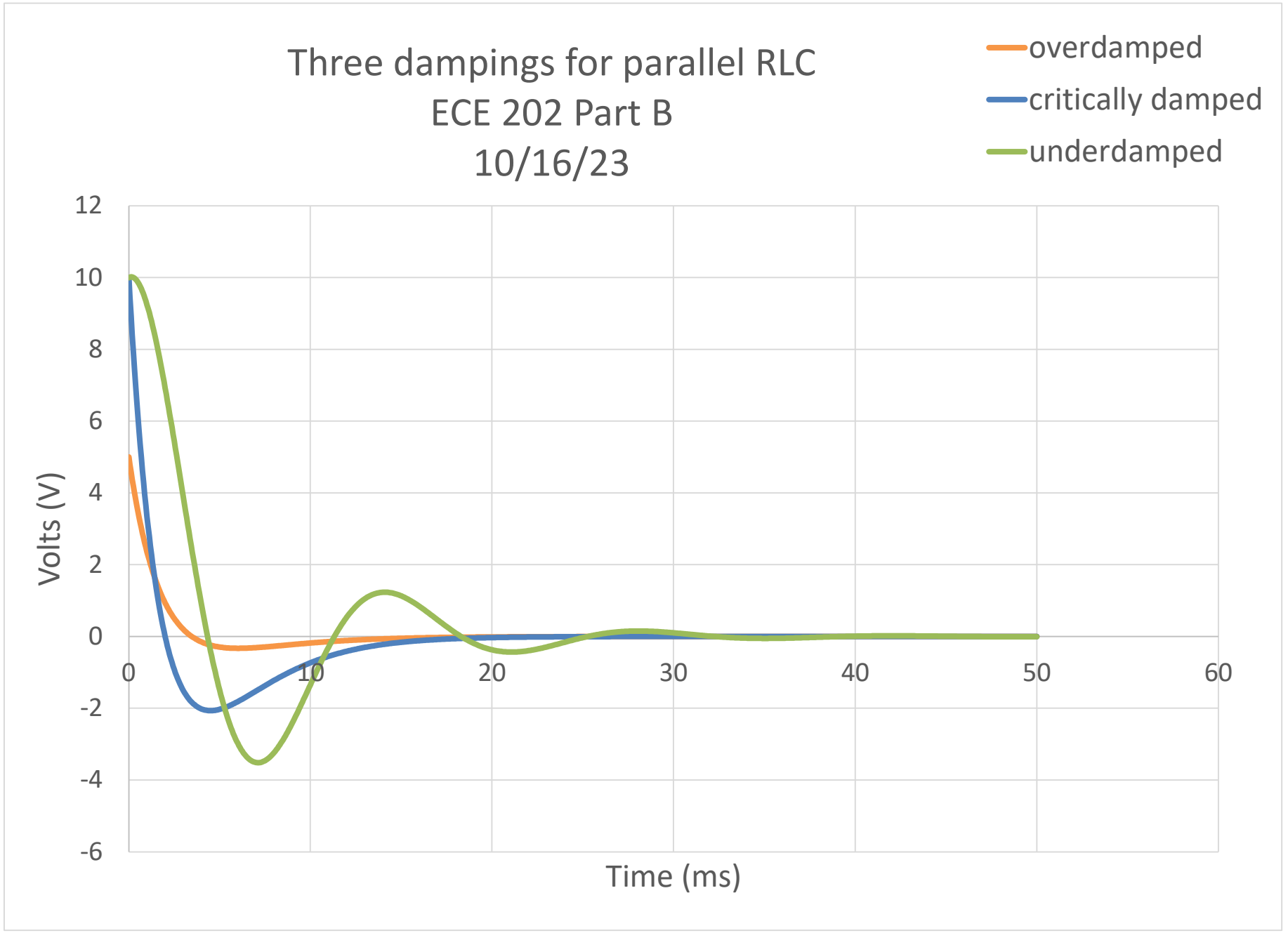
	A	B
1	Aidan Chin	
2	10/16/2023	
3	ECE 202 E2 Part A	
4		
5		
6		
7		
8	xmin	a0
9	-2	2
10	xmax	a1
11	2	-6
12	N (steps)	a2
13	400	4
14	dx (step size)	
15	0.01	
16		
17	x	f(x)
18	-2	30
19	-1.99	29.7804
20	-1.98	29.5616
21	-1.97	29.3436
22	-1.96	29.1264
23	-1.95	28.91

	A	B
1	Aidan Chin	
2	45215	
3	ECE 202 E2 Part A	
4		
5		
6		
7		
8	xmin	a0
9	-2	2
10	xmax	a1
11	2	-6
12	N (steps)	a2
13	400	4
14	dx (step size)	
15	= (A11-A9)/A13	
16		
17	x	f(x)
18	= A9	= $B$9 + $B$11*A18 + $B$13*A18^2
19	= A18+$A$15	= $B$9 + $B$11*A19 + $B$13*A19^2
20	= A19+$A$15	= $B$9 + $B$11*A20 + $B$13*A20^2
21	= A20+$A$15	= $B$9 + $B$11*A21 + $B$13*A21^2
22	= A21+$A$15	= $B$9 + $B$11*A22 + $B$13*A22^2
23	= A22+$A$15	= $B$9 + $B$11*A23 + $B$13*A23^2
24	= A23+$A$15	= $B$9 + $B$11*A24 + $B$13*A24^2
25	= A24+$A$15	= $B$9 + $B$11*A25 + $B$13*A25^2
26	= A25+$A$15	= $B$9 + $B$11*A26 + $B$13*A26^2
27	= A26+$A$15	= $B$9 + $B$11*A27 + $B$13*A27^2
28	= A27+$A$15	= $B$9 + $B$11*A28 + $B$13*A28^2


Truncated Power Series | ECE 202 E2 | 10/16/23
f(x)
x
35
30
25
20
15
10
5
0
-5
-2.5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5

	A	B	C	D	E
1	Aidan Chin				
2	10/16/2023				
3	ECE 202 E2 Part B				
4					
5					
6					
7					
8		tmin (seconds)	A1 (Volts)	A (Volts)	a (Volts)
9		0	10	10	10
10		tmax (seconds)	A2 (Volts)	B (Volts/Second)	b (Volts)
11		0.05	-5	-5000	4
12		N (steps)	s1 (Hz)	alpha2 (Hz)	alpha3 (Hz)
13		400	-500	400	150
14		dt (step size)	s2 (Hz)		w (rad/s)
15		0.000125	-300		450
16					
17	\/ to compute v(t)	\/ to plot	voltage		
18	time (seconds)	time (ms)	overdamped	critically damped	underdamped
19	0	0	5	10	10
20	0.000125	0.125	4.57815854	8.917775855	10.01942865
21	0.00025	0.25	4.186251594	7.917327408	10.00358007
22	0.000375	0.375	3.822304446	6.993252308	9.953807336
23	0.0005	0.5	3.484467949	6.140480648	9.87153073

	A	B	C	D	E
1	Aidan Chin				
2	45215				
3	ECE 202 E2 Part B				
4					
5					
6					
7					
8		tmin (seconds)	A1 (Volts)	A (Volts)	a (Volts)
9		0	10	10	10
10		tmax (seconds)	A2 (Volts)	B (Volts/Second)	b (Volts)
11		= 50/1000	-5	-5000	4
12		N (steps)	s1 (Hz)	alpha2 (Hz)	alpha3 (Hz)
13		400	-500	400	150
14		dt (step size)	s2 (Hz)		w (rad/s)
15		= (B11-B9)/B13	-300		450
16					
17	\/ to compute v(t)	\/ to plot	voltage		
18	time (seconds)	time (ms)	overdamped	critically damped	underdamped
19	= B9	= A19*1000	= $C$9*EXP($C$13*A19) + $C$11*EXP($C$15*A19)	= $D$9*EXP(-$D$13*A19) + $D$11*A19*EXP(-$D$13*A19)	= $E$9*EXP(-$E$13*A19)*COS($E$15*A19) + $E$11*EXP(-$E$13*A19)*SIN($E$15*A19)
20	= A19+$B$15	= A20*1000	= $C$9*EXP($C$13*A20) + $C$11*EXP($C$15*A20)	= $D$9*EXP(-$D$13*A20) + $D$11*A20*EXP(-$D$13*A20)	= $E$9*EXP(-$E$13*A20)*COS($E$15*A20) + $E$11*EXP(-$E$13*A20)*SIN($E$15*A20)
21	= A20+$B$15	= A21*1000	= $C$9*EXP($C$13*A21) + $C$11*EXP($C$15*A21)	= $D$9*EXP(-$D$13*A21) + $D$11*A21*EXP(-$D$13*A21)	= $E$9*EXP(-$E$13*A21)*COS($E$15*A21) + $E$11*EXP(-$E$13*A21)*SIN($E$15*A21)
22	= A21+$B$15	= A22*1000	= $C$9*EXP($C$13*A22) + $C$11*EXP($C$15*A22)	= $D$9*EXP(-$D$13*A22) + $D$11*A22*EXP(-$D$13*A22)	= $E$9*EXP(-$E$13*A22)*COS($E$15*A22) + $E$11*EXP(-$E$13*A22)*SIN($E$15*A22)
23	= A22+$B$15	= A23*1000	= $C$9*EXP($C$13*A23) + $C$11*EXP($C$15*A23)	= $D$9*EXP(-$D$13*A23) + $D$11*A23*EXP(-$D$13*A23)	= $E$9*EXP(-$E$13*A23)*COS($E$15*A23) + $E$11*EXP(-$E$13*A23)*SIN($E$15*A23)
24	= A23+$B$15	= A24*1000	= $C$9*EXP($C$13*A24) + $C$11*EXP($C$15*A24)	= $D$9*EXP(-$D$13*A24) + $D$11*A24*EXP(-$D$13*A24)	= $E$9*EXP(-$E$13*A24)*COS($E$15*A24) + $E$11*EXP(-$E$13*A24)*SIN($E$15*A24)


Three dampings for parallel RLC
ECE 202 Part B
10/16/23
overdamped
critically damped
underdamped
Volts (V)
12
10
8
6
4
2
0
-2
-4
-6
0
10
20
30
40
50
60
Time (ms)