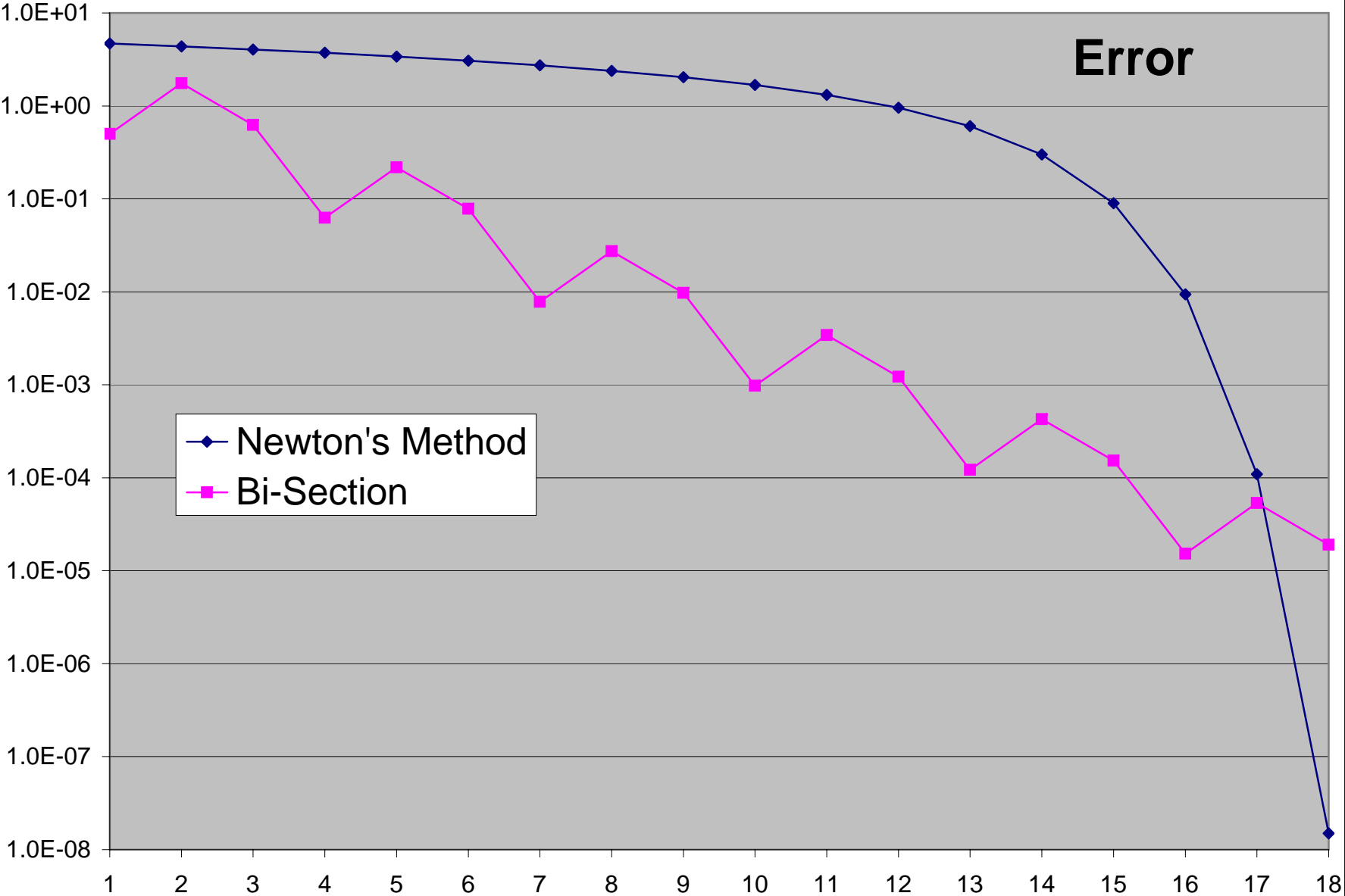


<b>Newton's Method</b>					
	$f(x) = x^x - 256$				
	$f'(x) = (x^x) * (1 + \ln(x))$				
	$x_{new} = x_{old} - f(x_{old}) / f'(x_{old})$				
n	xold	f(xold)	f'(xold)	xnew	Error
1	9	387420233	1238670309	8.687228934	4.7E+00
2	8.687228934	143309746.9	453125307.2	8.370959362	4.4E+00
3	8.370959362	53028810.35	165703556	8.050937199	4.1E+00
4	8.050937199	19629404.69	60572981.34	7.726875146	3.7E+00
5	7.726875146	7269088.064	22133004.81	7.398447618	3.4E+00
6	7.398447618	2693084.28	8083441.914	7.065287028	3.1E+00
7	7.065287028	998238.8515	2950745.637	6.726986485	2.7E+00
8	6.726986485	370200.8981	1076594.894	6.383123719	2.4E+00
9	6.383123719	137346.6853	392670.9472	6.033348197	2.0E+00
10	6.033348197	50957.03991	143258.3448	5.677647871	1.7E+00
11	5.677647871	18882.28058	52372.6137	5.317110574	1.3E+00
12	5.317110574	6963.346639	19282.36974	4.955985529	9.6E-01
13	4.955985529	2530.469975	7246.482793	4.60678578	6.1E-01
14	4.60678578	881.9745615	2876.265283	4.300146971	3.0E-01
15	4.300146971	273.7503958	1302.470387	4.089969144	9.0E-02
16	4.089969144	61.6260059	765.0141226	4.00941376	9.4E-03
17	4.00941376	5.818761965	625.3920861	4.000109578	1.1E-04
18	4.000109578	0.066949374	611.0581321	4.000000015	1.5E-08
19	4.000000015	9.1354E-06	610.8913792	4	0.0E+00
20	4	0	610.8913564	4	0.0E+00
21	4	0	610.8913564	4	0.0E+00
22	4	0	610.8913564	4	0.0E+00
23	4	0	610.8913564	4	0.0E+00
<b>Bi-Section</b>					
n	xold	f(xold)	xnew	Error	
1	0	9	4.5	5.0E-01	
2	0	4.5	2.25	1.8E+00	
3	4.5	2.25	3.375	6.3E-01	
4	4.5	3.375	3.9375	6.3E-02	
5	4.5	3.9375	4.21875	2.2E-01	
6	3.9375	4.21875	4.078125	7.8E-02	
7	3.9375	4.078125	4.0078125	7.8E-03	
8	3.9375	4.0078125	3.97265625	2.7E-02	
9	4.0078125	3.97265625	3.990234375	9.8E-03	
10	4.0078125	3.990234375	3.999023438	9.8E-04	
11	4.0078125	3.999023438	4.003417969	3.4E-03	
12	3.999023438	4.003417969	4.001220703	1.2E-03	
13	3.999023438	4.001220703	4.00012207	1.2E-04	
14	3.999023438	4.00012207	3.999572754	4.3E-04	
15	4.00012207	3.999572754	3.999847412	1.5E-04	
16	4.00012207	3.999847412	3.999984741	1.5E-05	
17	4.00012207	3.999984741	4.000053406	5.3E-05	
18	3.999984741	4.000053406	4.000019073	1.9E-05	
19	3.999984741	4.000019073	4.000001907	1.9E-06	
20	3.999984741	4.000001907	3.999993324	6.7E-06	
21	4.000001907	3.999993324	3.999997616	2.4E-06	
22	4.000001907	3.999997616	3.999999762	2.4E-07	
23	4.000001907	3.999999762	4.000000834	8.3E-07	
24	3.999999762	4.000000834	4.000000298	3.0E-07	
25	3.999999762	4.000000298	4.00000003	3.0E-08	
26	3.999999762	4.00000003	3.999999896	1.0E-07	
27	4.00000003	3.999999896	3.999999963	3.7E-08	
28	4.00000003	3.999999963	3.999999996	3.7E-09	
29	4.00000003	3.999999996	4.000000013	1.3E-08	
30	3.999999996	4.000000013	4.000000005	4.7E-09	

# Error



◆ Newton's Method  
■ Bi-Section