Adstock Rate - Deriving with Analytical Method

Instructions

1. Insert Sales and Advertising
2. Open Solver by going to the Data menu and selecting Solver
   If Solver isn't available then load the Add-in.
3. Click Solve

	Sales	Advertising Before Adstock	Advertising After Adstock	Model Results	After Adstock
1	670,871	0.332	0.332	Adstock Rate	44.32%
2	35,524,494	0.581	0.729	α	62907457.8
3	50,173,057	0.581	0.904	β	12649154.3994
4	46,849,336	0.581	0.982	SSE	##############
5	39,246,118	0.542	0.977	Correlation	0.2996
6	21,362	0.302	0.735	R-Squared	0.0898
7	8,831	0.302	0.628		
8	17,987	0.302	0.581		
9	72,788	0.302	0.560		
10	70,691,096	0.319	0.567		
11	98,352,774	0.326	0.577		
12	96,408,086	0.326	0.581		
13	97,663,276	0.326	0.583		
14	72,524,082	1.442	1.700		
15	44,150,510	2.930	3.684		
16	293,596,202	2.930	4.563		
17	52,892,091	2.930	4.952		
18	91,911,501	2.930	5.125		
19	93,892,473	0.302	2.574		
20	120,030,002	0.302	1.443		
21	50,012,648	0.302	0.942		
22	47,577,866	0.302	0.720		
23	66,395,702	0.601	0.920		
24	108,721,179	0.721	1.129		
25	69,263,878	0.721	1.221		
26	154,607,585	0.721	1.262		
27	71,141,134	0.548	1.108		
28	69,654,386	0.116	0.607		
29	62,962,474	0.116	0.385		
30	147,178,533	0.116	0.287		
31	73,797,654	0.116	0.244		
32	76,441,432	0.395	0.503		
33	69,958,251	0.442	0.665		
34	84,762,834	0.442	0.737		
35	89,314,294	0.442	0.768		
36	73,083,886	0.475	0.816		

37	148,786,415	0.488	0.850
38	77,341,625	0.488	0.865
39	70,677,953	0.488	0.872
40	73,150,392	0.409	0.795
41	81,245,287	0.209	0.562
42	69,788,971	0.209	0.458
43	52,650,999	0.209	0.412
44	114,397,752	0.209	0.392
45	74,672,993	0.186	0.360
46	76,415,745	0.186	0.346
47	78,010,767	0.186	0.339
48	150,047,690	0.186	0.336
49	67,177,030	0.266	0.415
50	68,384,498	0.326	0.509
51	70,872,725	0.326	0.551
52	75,167,242	0.326	0.570
53	51,431,436	0.233	0.485