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	0.027	0.027	Adstock Rate	17.41%
2	35,524,494	0.047	0.051	α	45287025.0
3	50,173,057	0.047	0.055	β	29727654.6663
4	46,849,336	0.047	0.056	SSE	##############
5	39,246,118	0.040	0.050	Correlation	0.4498
6	21,362	-	0.009	R-Squared	0.2023
7	8,831	-	0.002		
8	17,987	-	0.000		
9	72,788	-	0.000		
10	70,691,096	0.648	0.648		
11	98,352,774	0.907	1.020		
12	96,408,086	0.907	1.085		
13	97,663,276	0.907	1.096		
14	72,524,082	1.126	1.317		
15	44,150,510	1.419	1.648		
16	293,596,202	1.419	1.706		
17	52,892,091	1.419	1.716		
18	91,911,501	1.419	1.717		
19	93,892,473	0.977	1.276		
20	120,030,002	0.977	1.199		
21	50,012,648	0.977	1.186		
22	47,577,866	0.977	1.183		
23	66,395,702	1.176	1.382		
24	108,721,179	1.256	1.497		
25	69,263,878	1.256	1.516		
26	154,607,585	1.256	1.520		
27	71,141,134	1.189	1.454		
28	69,654,386	1.023	1.276		
29	62,962,474	1.023	1.246		
30	147,178,533	1.023	1.240		
31	73,797,654	1.023	1.239		
32	76,441,432	0.664	0.880		
33	69,958,251	0.605	0.758		
34	84,762,834	0.605	0.737		
35	89,314,294	0.605	0.733		
36	73,083,886	1.718	1.845		

37	148,786,415	2.163	2.484
38	77,341,625	2.163	2.595
39	70,677,953	2.163	2.615
40	73,150,392	1.890	2.346
41	81,245,287	1.209	1.618
42	69,788,971	1.209	1.491
43	52,650,999	1.209	1.469
44	114,397,752	1.209	1.465
45	74,672,993	0.326	0.581
46	76,415,745	0.326	0.427
47	78,010,767	0.326	0.400
48	150,047,690	0.326	0.395
49	67,177,030	0.365	0.434
50	68,384,498	0.395	0.471
51	70,872,725	0.395	0.477
52	75,167,242	0.395	0.478
53	51,431,436	0.282	0.366