

Investment Savings Comparison:

Patty and Selma are twin sisters with a January 1 birthday. At age 20 Patty decides to start saving for retirement, so on her birthday she deposits \$1000 into a savings plan which compounds interest annually. She continues making \$1000 deposits on each birthday up to and including her 29th, after which she makes no further deposits.

Selma doesn't start her savings plan at the same time as Patty, but instead waits until her 30th birthday to start saving. She too deposits \$1000 on her birthday each year and earns interest at the same rate compounded annually, but Selma continues making her deposits all the way to age 65. Selma figures she will catch up to Patty soon after making ten or so deposits, and by her retirement years she expects to live much more comfortably than her twin. She is wrong!

Look at the year end balances for each of the girls. Notice: **Selma never catches up to Patty**, even though Patty made only \$10,000 in total deposits while Selma contributed \$36,000 over the years. Why? By delaying her contribution start date Selma missed out on ten years of compound interest growth.

interest rate:

7.00%



Age at Jan 1	Patty				Selma			
	balance at beginning of year	contribution made Jan 1	interest earned in year	year end balance	balance at beginning of year	contribution made Jan 1	interest earned in year	year end balance
20	0	1000	70	1070	0	0	0	0
21	1070	1000	145	2215	0	0	0	0
22	2215	1000	225	3440	0	0	0	0
23	3440	1000	311	4751	0	0	0	0
24	4751	1000	403	6153	0	0	0	0
25	6153	1000	501	7654	0	0	0	0
26	7654	1000	606	9260	0	0	0	0
27	9260	1000	718	10978	0	0	0	0
28	10978	1000	838	12816	0	0	0	0
29	12816	1000	967	14784	0	0	0	0
30	14784	0	1035	15818	0	1000	70	1070
31	15818	0	1107	16926	1070	1000	145	2215
32	16926	0	1185	18111	2215	1000	225	3440
33	18111	0	1268	19378	3440	1000	311	4751
34	19378	0	1356	20735	4751	1000	403	6153
35	20735	0	1451	22186	6153	1000	501	7654
36	22186	0	1553	23739	7654	1000	606	9260
37	23739	0	1662	25401	9260	1000	718	10978
38	25401	0	1778	27179	10978	1000	838	12816
39	27179	0	1903	29082	12816	1000	967	14784
40	29082	0	2036	31117	14784	1000	1105	16888
41	31117	0	2178	33295	16888	1000	1252	19141
42	33295	0	2331	35626	19141	1000	1410	21550
43	35626	0	2494	38120	21550	1000	1579	24129
44	38120	0	2668	40788	24129	1000	1759	26888
45	40788	0	2855	43644	26888	1000	1952	29840
46	43644	0	3055	46699	29840	1000	2159	32999
47	46699	0	3269	49968	32999	1000	2380	36379
48	49968	0	3498	53465	36379	1000	2617	39995
49	53465	0	3743	57208	39995	1000	2870	43865
50	57208	0	4005	61212	43865	1000	3141	48006
51	61212	0	4285	65497	48006	1000	3430	52436
52	65497	0	4585	70082	52436	1000	3741	57177
53	70082	0	4906	74988	57177	1000	4072	62249
54	74988	0	5249	80237	62249	1000	4427	67676
55	80237	0	5617	85854	67676	1000	4807	73484
56	85854	0	6010	91863	73484	1000	5214	79698
57	91863	0	6430	98294	79698	1000	5649	86347
58	98294	0	6881	105174	86347	1000	6114	93461
59	105174	0	7362	112537	93461	1000	6612	101073
60	112537	0	7878	120414	101073	1000	7145	109218
61	120414	0	8429	128843	109218	1000	7715	117933
62	128843	0	9019	137862	117933	1000	8325	127259
63	137862	0	9650	147512	127259	1000	8978	137237
64	147512	0	10326	157838	137237	1000	9677	147913
65	157838	0	11049	168887	147913	1000	10424	159337