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Topic 1	
Assumption:	Share Price grow at the same rate as company's IRR
Initial Price:	P
IRR:	i%
no of years:	n
Doubled share price:	2P

Year(in years)	Price
1	P(i+1)^1
2	P(i+1)^2
3	P(i+1)^3
…	…
n	P(i+1)^n

Therefore,

$P(1+i)^n = 2P$

$(1+i)^n = 2$

$n(\ln(1+i)) = \ln(2)$

$n = \ln 2/\ln(1+i)$ (Relation between i and n)

IRR(in %) i	No of years to double share Price, n = ln2/ln(1+i)
1	69.66
2	35.00
3	23.45
4	17.67
5	14.21
6	11.90
7	10.24
8	9.01
9	8.04
10	7.27
11	6.64
12	6.12
13	5.67
14	5.29
15	4.96
16	4.67
17	4.41
18	4.19
19	3.98
20	3.80
21	3.64
22	3.49
23	3.35
24	3.22
25	3.11
26	3.00
27	2.90

Hence, for **IRR of 2%**, it would take 35 years to double the share price

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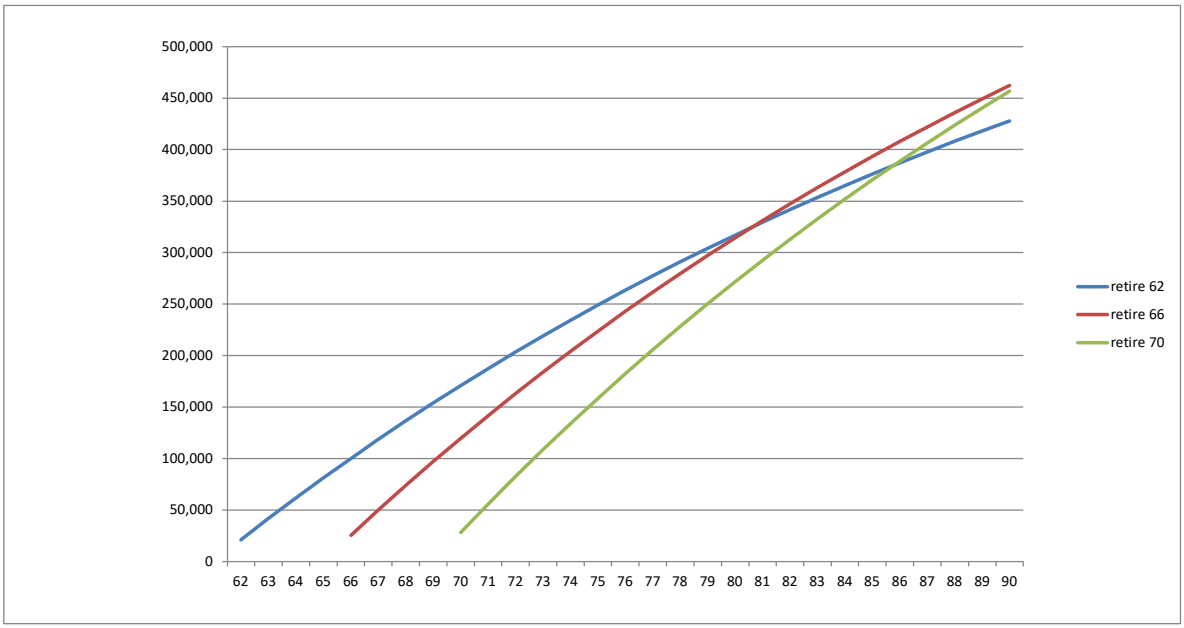
(Note: All SSA payments are in $)

i = 2.80%
SSA payment(at 66) = 28200
SSA payment(at 62) = 0.75*28200 = 21150
SSA payment (at 70) = 1.25*28200 = 35250

Years	Age (yrs)	retire 62	Value after Inflation	CUM retire 62	retire 66	Value after Inflation	CUM retire 66	retire 70	Value after Inflation	CUM retire 70
0	62	21,150	21,150	21,150						
1	63	21,150	20,574	41,724						
2	64	21,150	20,014	61,737						
3	65	21,150	19,468	81,206						
4	66	21,150	18,938	100,144	28,200	25,251	25,251			
5	67	21,150	18,422	118,566	28,200	24,563	49,814			
6	68	21,150	17,921	136,487	28,200	23,894	73,708			
7	69	21,150	17,432	153,919	28,200	23,243	96,951			
8	70	21,150	16,958	170,877	28,200	22,610	119,562	35,250	28,263	28,263
9	71	21,150	16,496	187,373	28,200	21,994	141,556	35,250	27,493	55,756
10	72	21,150	16,046	203,419	28,200	21,395	162,951	35,250	26,744	82,500
11	73	21,150	15,609	219,029	28,200	20,813	183,764	35,250	26,016	108,515
12	74	21,150	15,184	234,213	28,200	20,246	204,009	35,250	25,307	133,822
13	75	21,150	14,771	248,984	28,200	19,694	223,704	35,250	24,618	158,440
14	76	21,150	14,368	263,352	28,200	19,158	242,861	35,250	23,947	182,388
15	77	21,150	13,977	277,329	28,200	18,636	261,497	35,250	23,295	205,682
16	78	21,150	13,596	290,925	28,200	18,128	279,626	35,250	22,660	228,343
17	79	21,150	13,226	304,151	28,200	17,635	297,260	35,250	22,043	250,386
18	80	21,150	12,866	317,017	28,200	17,154	314,415	35,250	21,443	271,829
19	81	21,150	12,515	329,532	28,200	16,687	331,102	35,250	20,859	292,688
20	82	21,150	12,174	341,707	28,200	16,233	347,334	35,250	20,291	312,979
21	83	21,150	11,843	353,549	28,200	15,790	363,125	35,250	19,738	332,717
22	84	21,150	11,520	365,070	28,200	15,360	378,485	35,250	19,200	351,917
23	85	21,150	11,206	376,276	28,200	14,942	393,427	35,250	18,677	370,595
24	86	21,150	10,901	387,177	28,200	14,535	407,962	35,250	18,169	388,763
25	87	21,150	10,604	397,782	28,200	14,139	422,101	35,250	17,674	406,437
26	88	21,150	10,315	408,097	28,200	13,754	435,855	35,250	17,192	423,630
27	89	21,150	10,035	418,132	28,200	13,379	449,234	35,250	16,724	440,354
28	90	21,150	9,761	427,893	28,200	13,015	462,249	35,250	16,269	456,622
29	91	21,150	9,495	437,388	28,201	12,661	474,910	35,250	15,826	472,448
30	92	21,150	9,237	446,625	28,202	12,316	487,227	35,250	15,395	487,842



From the chart/ data values, it is evident that:

1. Breakeven points: 81 years(retire at 62 years vs 66 years), 86 years(retire at 66 years vs 70 years) & 92 years(retire at 62 years vs 70 years)
2. Men(life expectancy: 78 years): They should retire early at 62 since their life expectancy is less than all three breakeven points(age)
3. Women(life expectancy: 82 years): They should retire at the age of 66 years since their life expectancy is greater than the breakeven age of 81 years(retire at 62 years vs 66 years), but less than the two breakeven points/ages of 86 years(retire at 66 years vs 70 years) & 92 years(retire at 62 years vs 70 years)