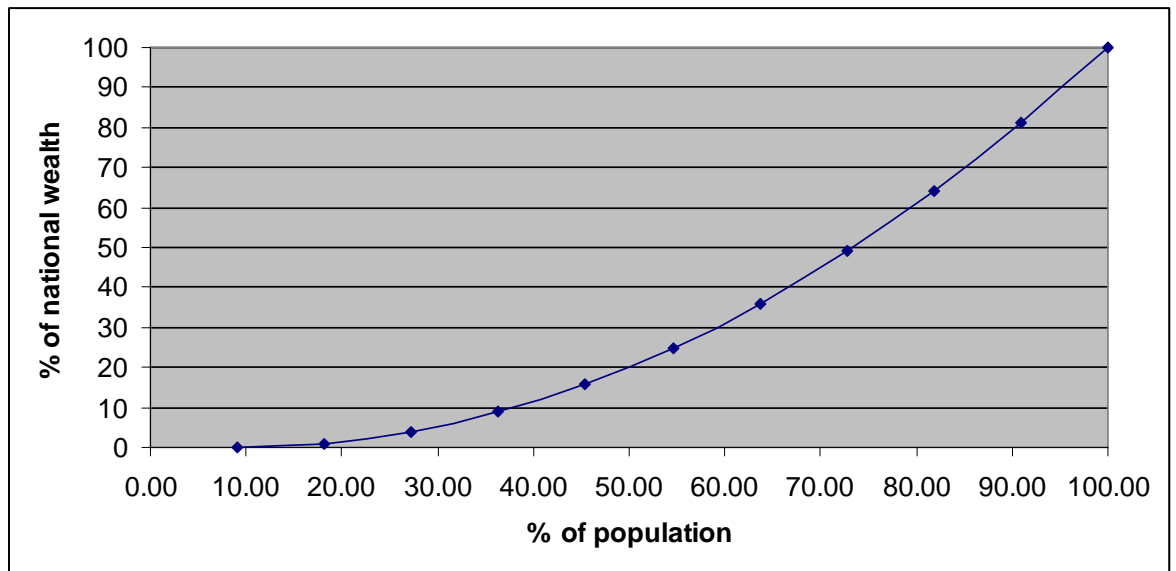


Solution

1. (a) mean = 9.1; median = 9.0
- (b) there are 11 people in the economy and total wealth is 100; so we know that less than  $1/11$  ( $\frac{1}{11}(100) = 9.09\%$ ) of the population earn zero wealth. So one point on the LC is 9.09 on x-axis and 0 on y-axis. Next, we know that  $2/11$  (18.18%) of the population earn  $(1+0)/100 = 1\%$  of national wealth. So the next point on the LC is 18.18 (on the X-axis) and 1% on the y-axis. Next point, similarly will be 27.27% of the population earn  $(0+1+3)/100 = 4\%$  of national wealth and so on.

people	wealth	cumulative wealth	% of poorest population	% of national wealth
1	0	0	9.09	0
2	1	1	18.18	1
3	3	4	27.27	4
4	5	9	36.36	9
5	7	16	45.45	16
6	9	25	54.55	25
7	11	36	63.64	36
8	13	49	72.73	49
9	15	64	81.82	64
10	17	81	90.91	81
11	19	100	100	100



(c) you are asked to solve this problem:

$$\max c_1^{\frac{1}{2}} c_2^{\frac{1}{2}}$$

subject to

$$c_1 = w - S$$

$$c_2 = RS$$

The problem reduces to

$$(w - S)^{\frac{1}{2}} (RS)^{\frac{1}{2}}$$

take the derivative of this and set to zero, solve for  $S$ ; can check that

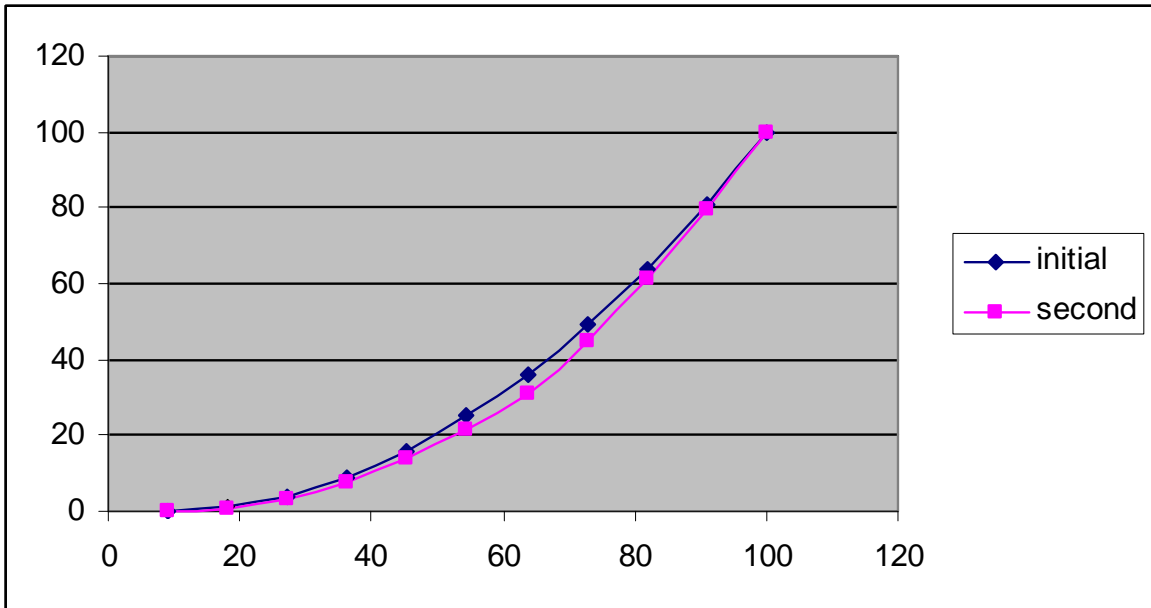
$$S = \frac{w}{2}$$

independent of  $R$

- (d) The richest four save at the return  $R_{\text{high}} = 1.3$ ; their second period wealth will be  $R_{\text{high}}$  times their saving; for the rest, their second pd wealth will be  $R_{\text{low}}$  times their saving.

people	initial wealth	saving	second pd wealth	cumm second pd wealth	% of poorest population	% of national wealth
1	0	0	0	0	9.090909	0
2	1	0.5	0.515	0.515	18.18182	0.85634
3	3	1.5	1.545	2.06	27.27273	3.42534
4	5	2.5	2.575	4.635	36.36364	7.70702
5	7	3.5	3.605	8.24	45.45455	13.7014
6	9	4.5	4.635	12.875	54.54545	21.4084
7	11	5.5	5.665	18.54	63.63636	30.8281
8	13	6.5	8.45	26.99	72.72727	44.8786
9	15	7.5	9.75	36.74	81.81818	61.0908
10	17	8.5	11.05	47.79	90.90909	79.4646
11	19	9.5	12.35	60.14	100	100

(e)



inequality in wealth increases when some people can access the superior asset but not others