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t	y	$\Delta y / y = \% \text{ change}$
0	100	
1	104	$4.16 / 100 = 4\%$
2	108.16	
3	112.49	$4.33 / 108.16 = 4\%$

Not linear, but exponential

$$y = k \cdot a^t$$

$k = \text{Starting value} = 100$

$a = \text{growth factor} = 1.04$

$= 1 + \text{growth rate}$

(balance + interest)

$$y = 100 \cdot (1.04)^t$$

$y = \text{balance (\$)} \quad t = \text{yrs}$

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(2)

yr	Pop	$\Delta P/P$	
0	236.3		
1	238.5	$(238.5 - 236.3)/236.3$	$.0093 = .93\%$
2	240.7	.92%	
3	242.8	.87%	.0087
4	245.0	.91%	$= .00906... = .0091$

.93		.93	
.92	order	.92	Median
.87	→	.91	→ .915%
.91		.87	

$$y = 236.3 * 1.00915^t$$

y = US pop in millions

t = yrs since 1984

The US pop was 236.3 mil in '84

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(3)

has grown by .915%
each year since then.

Take 2 - Data from every other yr

t	P	$\Delta P/P$
0	236.3	1.8%
2	240.7	1.75%
4	245.0	1.799%?

Median = 1.775% = $\times 0.01775$

$\hat{a}^2 = \pm 0.01775$

$a = \sqrt{1.01775} = 1.008$

$$y = 236.3 * 1.008^t$$

$$y = \text{US pop}, t = \text{yrs since '84.}$$

Δt	Yr	Pop of Chile (thousands)
12 <	1940	5023
8 <	1952	5932
10 <	1960	7374
	1970	8885

(4)

→ Δt is not constant.

So Method 1 will
not apply.

Method 2