

Analysis with the TI92 – world population modelling

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According to the International Programs Center, U.S.Bureau of the Census, the total population of the world, projected to 10/29/97 at 7:05:35 AM EST is

5,872,874,857

Monthly World population figures :

07/01/97	5,846,871,429
08/01/97	5,853,572,477
09/01/97	5,860,273,525
10/01/97	5,866,758,411
11/01/97	5,873,459,460
12/01/97	5,879,944,345
01/01/98	5,866,645,394
02/01/98	5,893,346,442
03/01/98	5,899,399,002
04/01/98	5,906,100,051
05/01/98	5,912,584,936
06/01/98	5,919,285,985
07/01/98	5,925,770,871

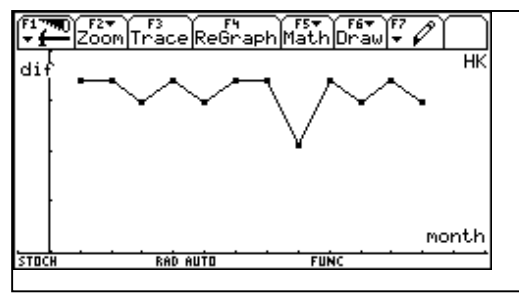
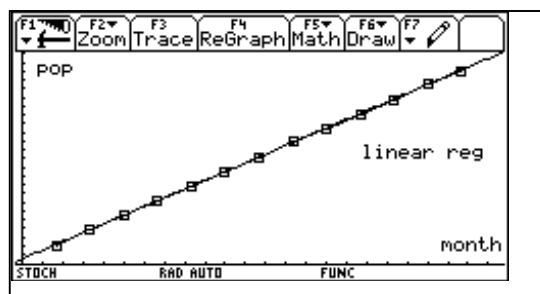
Data updated 10-10-97

(<http://www.census.gov/cgi-bin/ipc/popclockw>)

Analysing the facts :

F1	F2	F3	F4	F5	F6	F7
Plot	Setup	Cell	Header	Calc	Util	Stat
DATA	Date	Number	Month			
	c1	c2	c3			
1	1997.58333	5846871429	1			
2	1997.66667	5853572477	2			
3	1997.75	5860273525	3			
4	1997.83333	5866758411	4			
5	1997.91667	5873459460	5			
6	1998.	5879944345	6			
7	1998.08333	5886645394	7			
c1=approx(seq(1997+k/12,k,7,1...						
STOCH	RAD	AUTO	FUNC			

F1	F2	F3	F4	F5	F6	F7
Plot	Setup	Cell	Header	Calc	Util	Stat
DATA	Month	Shift	Difference			
	c3	c4	c5			
1	1	5853572477	6701048			
2	2	5860273525	6701048			
3	3	5866758411	6484886			
4	4	5873459460	6701049			
5	5	5879944345	6484885			
6	6	5886645394	6701049			
7	7	5893346442	6701048			
c3=seq(i,i,1,13)						
STOCH	RAD	AUTO	FUNC			

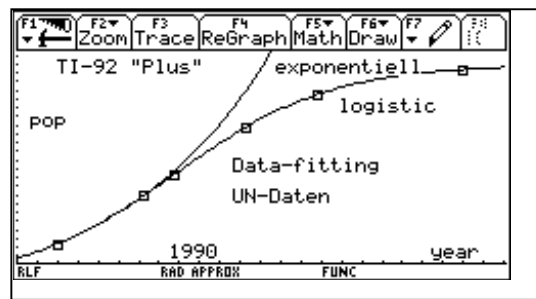
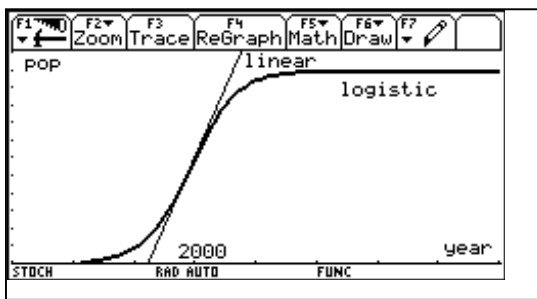


Models of population growth

Population projections first became important to political philosophers in the late eighteenth century. As concern for scarce resource has grown, so has interest in accurate population projections. There are several models of population growth, discrete and continuous models. They all used to model human and animal population growth as well as growth processing in economics.

Discrete models of population growth with the TI-92 – Applications with the data/matrix-editor and the recursive defined sequences

1. The linear model
2. The percentage model – the exponential model
3. The logistic Model



The population of Rwanda

Area : 26,338 km²

	1997	2005
Birth per 1,000 population	39	39
Death per 1,000 population	18	22
Annual rate of growth (percent)	3.6	1.7
Life expectancy at birth (year)	42.6	39.0
Infant deaths per 1,000 live births	114	105
Total fertility rate (per woman)	5.9	5.4

Year	Population	Year	Population	Period	Growth rate
1950	2,439	1996	6,273	1950-1960	2.2
1960	3,032	1997	7,718	1960-1970	2.2
1970	3,769	1998	7,956	1970-1980	3.2
1980	5,170	1999	8,155	1980-1990	3.3
1990	7,161	2000	8,337	1990-2000	1.5
1991	7,359	2010	9,881	2000-2010	1.7
1992	7,547	2020	11,304	2010-2020	1.3
1993	7,721	2030	13,272	2020-2030	1.6
1994	6,682	2040	16,262	2030-2040	2.0
1995	5,980	2050	19,607	2040-2050	1.9

(Population in thousands, rate in percent)

Problem : analyze the table with the TI-92 data/matrix-editor