

Polynomial Regression

Each group will be given a data set and questions about that set. Find the polynomial regression function for that data and answer the questions.

Source: Statistical Abstract of the United States, 2006, Table 96

t Birth Year	m Male Life Expectancy (years)	f Female Life Expectancy (years)
1980	70.0	77.4
1982	70.8	78.1
1983	71.0	78.1
1984	71.1	78.2
1985	71.1	78.2
1986	71.2	78.2
1987	71.4	78.3
1988	71.4	78.3
1989	71.7	78.5
1990	71.8	78.8
1991	72.0	78.9
1992	72.3	79.1
1993	72.2	78.8
1994	72.3	79.0
1995	72.5	78.9
1996	73.0	79.0
1997	73.6	79.4
1998	73.8	79.5
1999	73.9	79.4
2000	74.3	79.7
2002	74.5	79.9
2003	74.8	80.1
2005	74.9	80.7
2010	75.6	81.4

Source: The Legacy of Membership: USAA 2006 Report to Members

Year t	Years (since 1999) x	USAA products (millions) p
1999	0	14.7
2000	1	15.9
2001	2	16.8
2002	3	17.6
2003	4	18.4
2004	5	19.8
2005	6	21.8
2006	7	23.9

Source: Statistical Abstract of the United States, 2006, Table 842

t Year (Since 1990)	E Egg Production (billions)
0	68.1
5	74.8
7	77.5
8	79.8
9	82.9
10	84.7
11	86.1
12	87.3
13	87.5
14	89.1

Source: Statistical Abstract of the United States, 2006, Table 121

t Year (Since 1990)	T Total Per Capita Spending on Health Services and Supplies (dollars)
0	2633
5	3530
8	3962
9	4154
10	4389
11	4733
12	5115
13	5452

E Source: The Legacy of Membership: USAA 2006 Report to Members

Year t	Years (since 1999) x	USAA members (millions) m
1999	0	4.1
2000	1	4.4
2001	2	4.6
2002	3	4.8
2003	4	5.0
2004	5	5.2
2005	6	5.5
2006	7	5.9

F Source: Statistical Abstract of the United States 2007, Table 1119

Year t	Years (since 2004) x	Consumer Spending on Books (million dollars) b
2004	0	49,146.6
2005	1	51,919.8
2006*	2	53,723.8
2007*	3	55,546.9
2008*	4	57,194.3
2009*	5	58,875.2
* projected		

G Source: Statistical Abstract of the United States 2007, Table 1111

Year t	Years (since 1992) x	Television Sets in Homes (millions) T
1992	0	192
1993	1	201
1994	2	211
1995	3	217
1996	4	223
1997	5	229
1998	6	235
1999	7	240
2000	8	245
2001	9	248
2002	10	254
2003	11	260
2004	12	268
2005	13	287

H Source: Statistical Abstract of the United States, 2006, Table 121

t Year (Since 1990)	P Per Capita Spending on Physician and Clinical Services (dollars)
0	619
5	813
8	914
9	954
10	1010
11	1085
12	1162
13	1249

I Source: Statistical Abstract of the United States, 2006, Table 1003

t Year (since 2000)	P Pager Sales (millions of dollars)	C Cell Phone Sales (millions of dollars)
0	750	8995
1	790	8651
2	810	8106
3	729	9163
4	675	10538