

Classifying Polynomials

Write each polynomial in standard form. Then classify it by degree and by number of terms.

a. $-7x + 5x^4$

b. $x^2 - 4x + 3x^3 + 2x$

Write each polynomial in standard form. Then classify it by degree and by number of terms.

a. $4x - 6x + 5$

b. $3x^3 + x^2 - 4x + 2x^3$

c. $6 - 2x^5$

Comparing Models

Using a graphing calculator, determine whether a linear model, a quadratic model, or a cubic model best fits the values in the table.

x	0	5	10	15	20
y	10.1	2.8	8.1	16.0	17.8

Life Expectancy (years)

Year of Birth	Males	Females
1970	67.1	74.7
1980	70.0	77.4
1990	71.8	78.8
2000	74.3	79.7
2010	74.5	81.3

SOURCE: U.S. Bureau of the Census.
Go to www.PHSchool.com for a
data update.
Web Code: agg-9041

Vital Statistics The data at the right indicate that the life expectancy for residents of the United States has been increasing. Recall that in Chapter 3 you found linear models for this data set.

- Find quadratic models for the data set.
- Find cubic models for the data set.
- Graph each model. Compare the quadratic and cubic models to determine whether one is a better fit.

The table shows U.S. energy production for a number of years.

a. Find a linear model, a cubic model, and a quartic model for the data set.

Let 0 represent 1960.

b. Graph each model. Compare the three models to determine which fits best.

c. Use your answer to part (b) to estimate U.S. energy production in 1997.

U.S. Energy Production

Year	1960	1965	1970	1975	1980	1985	1990	1995	2000
Production ($\times 10^{15}$ Btu)	41.5	49.3	62.1	59.9	64.8	64.9	70.8	71.0	71.2

SOURCE: Energy Information Administration. Go to www.PHSchool.com for a data update.

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