Quadratic Regression

Learning Objectives

- Perform a quadratic regression with a calculator
- Use the results of a quadratic regression equation to estimate values

Perform a quadratic regression with a calculator

1. Fourteen houses are sampled and their square footage and monthly kilowatt hours are recorded. The table below shows the data collected.

Home	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Square Feet	2843	1882	2968	2214	1766	2430	2992	1310	2627	2902	2944	2448	2816	2369
Monthly Electricity (kWh)	1922	1666	1845	1879	1590	1908	1847	1160	1943	1882	1875	1949	1894	1870

Find the quadratic regression equation that best fits the data.

Use the results of a quadratic regression equation to estimate values

2. How much electricity would be required to heat the house if it had 2500 square feet? Round your answer to one decimal place.

ANSWER KEY

1. $y = -0.0005x^2 + 2.4376x - 1239.9$
2. $1729.1 \, kWh$