

LESSON **3.1** Skills Practice

Name _____ Date _____

Is It Getting Hot in Here? Modeling Data Using Linear Regression

Vocabulary

Choose the term that best completes each sentence.

linear regression	line of best fit	linear regression equation
significant digits	correlation coefficient	

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1. The equation that describes a line of best fit is called a _____.
2. Decimal digits that carry meaning contributing to a number's precision are _____.
3. _____ models the relationship between two variables in a data set by producing a line of best fit.
4. A _____ is a line that best approximates the linear relationship between two variables in a data set.
5. The _____ indicates how closely data points are to forming a straight line.

Problem Set

Use your calculator to determine the linear regression equation and the correlation coefficient for each given set of data. Then use the equation to make the prediction.

1. The table shows the attendance for the varsity football games at Pedro's high school. Predict the attendance for Game 9.

Game	Attendance
1	2000
2	2132
3	2198
4	2301
5	2285
6	2401

$$f(x) = 73x + 1963, r \approx 0.9694$$

Game 1 is represented by $x = 1$, so Game 9 is represented by $x = 9$.

$$f(x) = 73x + 1963$$

$$f(9) = 73(9) + 1963$$

$$f(9) = 2620$$

The attendance during Game 9 will be 2620 people.

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2. The table shows the attendance for the annual spring concert at Eva's high school for 6 years. Predict the attendance in 2016.

Year	Attendance
2007	789
2008	805
2009	773
2010	852
2011	884
2012	902

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3. The table shows the average gas price for 6 months. Predict the average gas price for August.

Month	Price of Gas (dollars)
January	\$3.15
February	\$3.22
March	\$3.19
April	\$3.28
May	\$3.35
June	\$3.32

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4. The table shows monthly record sales of a recording artist over 6 months. Predict the record sales total for December.

Monthly	Record Sales (CDs)
January	60,000
February	54,000
March	58,000
April	46,000
May	43,000
June	30,000



5. The table shows the number of miles Kata traveled for work each year for 6 years. Predict the number of miles Kata will travel in 2014.

Year	Miles Traveled
2006	8300
2007	7550
2008	8005
2009	7600
2010	6935
2011	6405

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6. The table shows the number of songs downloaded for a recording artist over 6 months. Predict the number of songs that will be downloaded in November.

Month	Songs Downloaded
January	15,302
February	16,783
March	18,204
April	17,899
May	20,345
June	24,980

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