**UNIT 6 • DESCRIBING DATA**
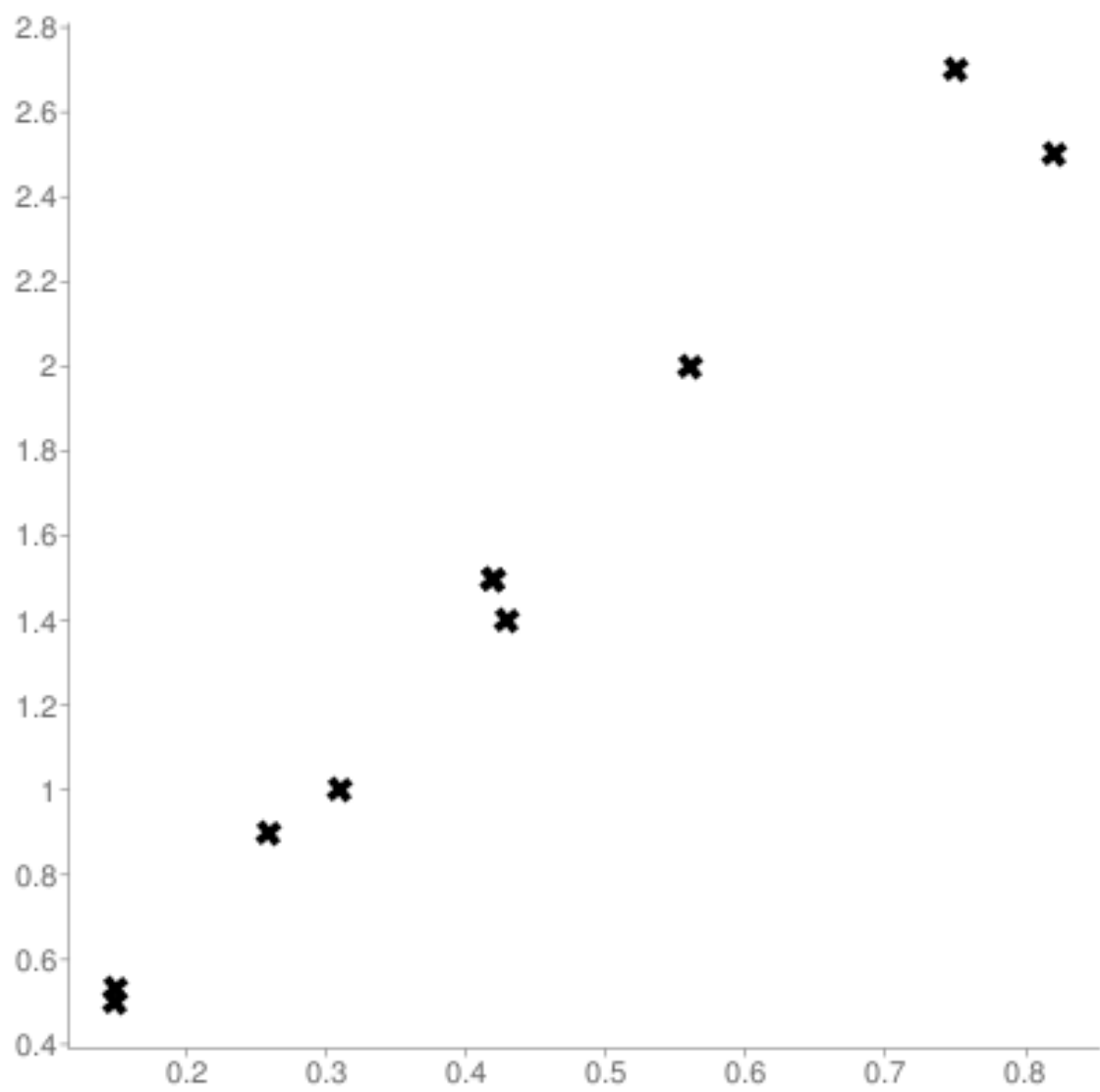Lesson 2: Working with Two Variables

## Practice 6.2.2: Analyzing Functions Fitted to Data                    A

Racecar tracks vary in length. A racecar driver records the time it takes him to circle various tracks once at top speed. The distance of the track and his time to circle each track once are listed in the following table. Use the data for problems 1–3.

| Time in minutes | Track length in miles |
|:---:|:---:|
| 0.42 | 1.5 |
| 0.15 | 0.53 |
| 0.42 | 1.5 |
| 0.43 | 1.4 |
| 0.82 | 2.5 |
| 0.31 | 1 |
| 0.56 | 2 |
| 0.26 | 0.9 |
| 0.15 | 0.5 |
| 0.75 | 2.7 |

1. Create a scatter plot of the data set.

2. Would a linear or exponential function be a better estimate for the data? Explain.

3. Which function is a better fit for the data: $y = 2.3x$ or $y = 3.3x$? Use a graph to support your answer.

# UNIT 6 • DESCRIBING DATA
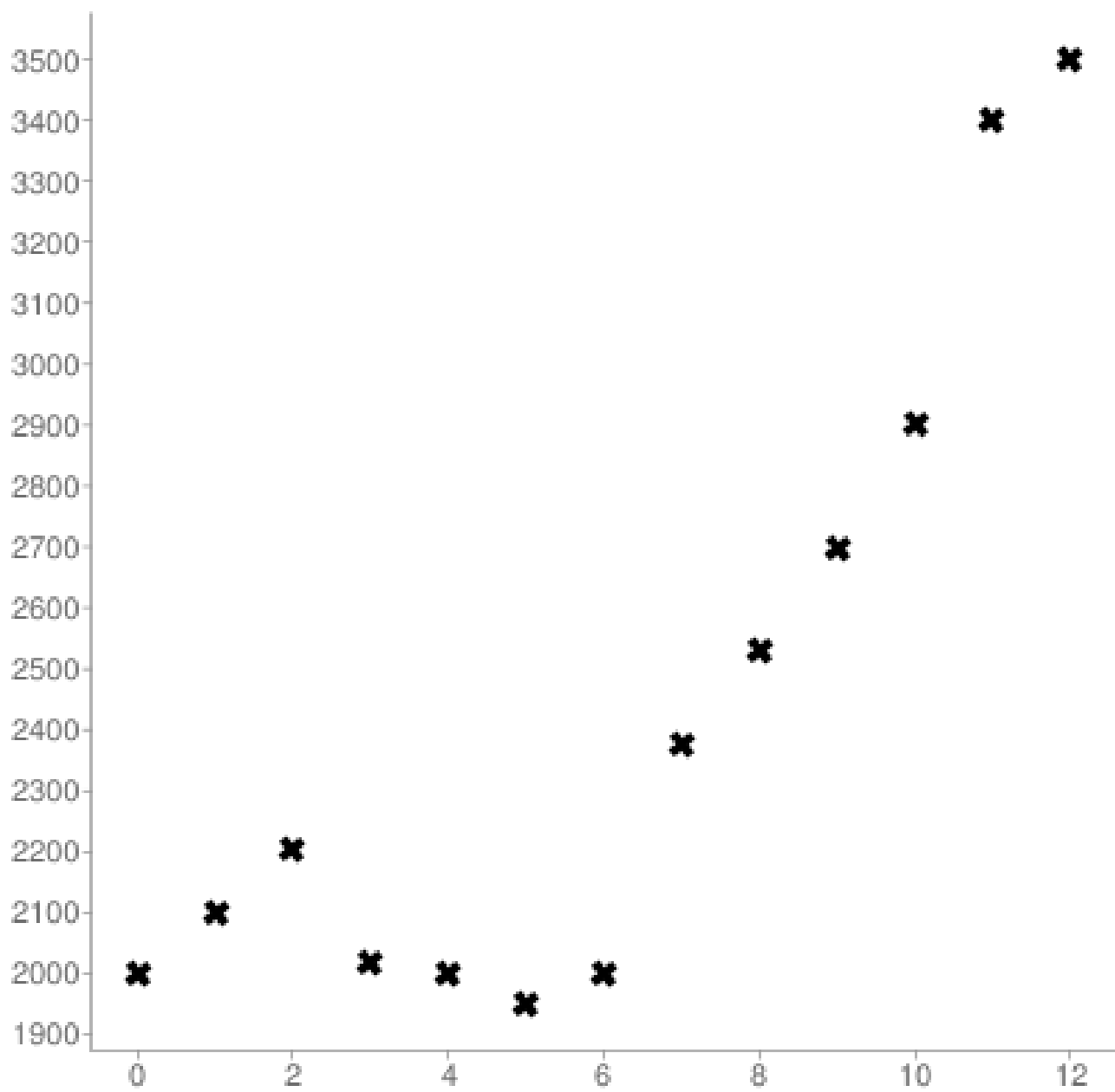## Lesson 2: Working with Two Variables

In the stock market, you can buy shares of a company as an investment. The value of the investment rises and falls with the price of the shares. The following table shows the value of a $2,000 investment over a 12-month period. Use the data for problems 4 and 5.

| Months | Value |
|--------|--------|
| 0 | $2,000 |
| 1 | $2,100 |
| 2 | $2,205 |
| 3 | $2,018 |
| 4 | $2,000 |
| 5 | $1,950 |
| 6 | $2,000 |
| 7 | $2,378 |
| 8 | $2,528 |
| 9 | $2,700 |
| 10 | $2,900 |
| 11 | $3,400 |
| 12 | $3,500 |

4.  Create a scatter plot of the data set.

5.  Which function is a better fit for the data: $y = 2000(1.05)^x$ or $y = 12x^2 - 30x + 2000$?

**UNIT 6 • DESCRIBING DATA**
## Lesson 2: Working with Two Variables

The value of a car is expected to depreciate over time. Bethan buys a car for $20,000. Each year, she determines how much her car is worth. She records the value of her car each year in the following table. Use the data for problems 6–10.

| Year | Value in dollars ($) |
|:---:|:---:|
| 0 | 20,000 |
| 1 | 16,000 |
| 2 | 14,500 |
| 3 | 13,200 |
| 4 | 12,000 |
| 5 | 11,000 |
| 6 | 10,000 |

6. Create a scatter plot showing the value of her car over time.

7. Would a linear or exponential function be a better estimate for the data? Explain.

8. Is $y = 19{,}000(1.10)^x$ or $y = 19{,}000(0.90)^x$ a good estimate for the data? Use your graph to explain why or why not.

9. Bethan wants to sell her car when it's worth approximately $9,000. After how many years should Bethan sell it? Use your graph to explain your answer.

10. How much will her car be worth in 12 years?