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Self-Contained Problems

The word problems in this book are built around short stories with graphics that contain lots of numerical data. But sometimes a problem is self-contained. That means all the information you need is right there in the problem. All the rest of the facts are extra information that you can ignore.

Try this problem.

11 Asia weighs 980 pounds more than Betsy. Betsy is a younger elephant than Asia and weighs 7,718 pounds. How much does Asia weigh?

A What do you want to find out?

_____

_____

B What information do you know?

_____

_____

C How can you find the answer?

_____

_____

D Write an equation to solve the problem.

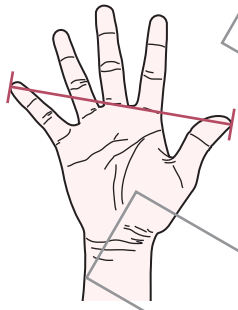
Here's another problem to try on your own.

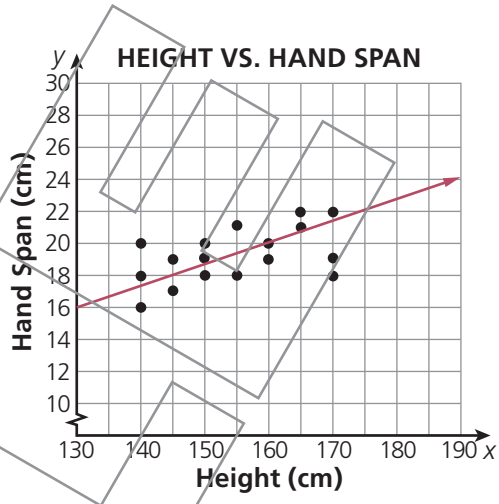
12 The sanctuary is home to 9 elephants in all. They have an average weight of 8,800 pounds. What is the total weight of the elephants at the sanctuary?

27 Hand Spans

Jordan studied the relationship of height to hand span. He collected his data from a random sample of seventh and eighth graders, plotted the data on a scatter plot, and then drew a line of best fit. His scatter plot is shown here.

Jordan did not use himself or his friends as data sources. He himself is 175 centimeters tall. His friend Nobu has an actual hand span of 18 centimeters.





Solve each problem. If there is not enough information to solve it, tell what is needed.

1 What is the slope of the line of best fit on Jordan's scatter plot? Write your answer as a fraction.

Choose two points that are on the line.

2 What is the equation of the line of best fit? Explain how you found the equation.

Use the coordinates of the point where the line crosses the *y*-axis to find *b*.

3 What is Jordan's expected hand span? Write your answer as a fraction.

For which coordinate can you substitute a value?

4 What is Nobu's expected height, to the nearest hundredth meter?

5 Nobu's actual height is 5% greater than his expected height. What is his actual height, to the nearest hundredth centimeter?

6 Lakshmi's actual hand span is 1.5 centimeters less than her expected hand span. What is her actual hand span?

7 An actual plotted point on the scatter plot is (160, 20). What percent of the height is the hand span?

8 Select three points from the scatter plot, above and below the line of best fit. For each point, find what percent of the height the hand span represents. What does the slope of the line of best fit mean in relation to the hand span and the height and how does it relate to the percentages found for the selected points? Explain.

What is the *y*-to-*x* ratio as a percent?