Lesson Objective: Interpret data given in percent form on circle graphs and line graphs.
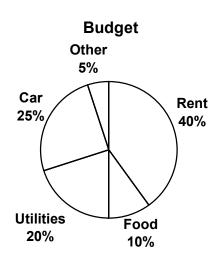
Vocabulary Box

percent – A fraction or ratio in which the denominator is assumed to be 100. The symbol % is used for percent. Example: $\dfrac{45}{100} = 45\,\%$.

Guided Practice

Directions: Complete the following practice problems. Your teacher will review the answers. Make sure that you show all your work, write your answers in correct units, and check each answer.
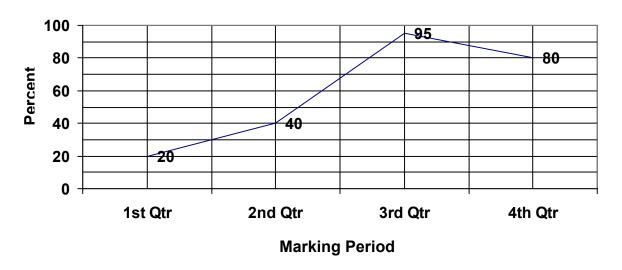
I. Use the circle graph below to answer the questions. You may work with a partner.

Budget

1. What percent of the budget is spent on rent?

2. If the total budget is $2,000 a month, how much money is spent on rent?

3. If the total budget is $1,500 a month, how much money is spent on food?

4. What percent of the budget goes toward car and utilities?

5. If the total budget is $2,500, how much money is spent on the car and utilities together?

II. Use the line graph below to answer the questions. Please work independently.

Grades

Percent (y-axis): 0, 20, 40, 60, 80, 100

Marking Period (x-axis): 1st Qtr, 2nd Qtr, 3rd Qtr, 4th Qtr

Data points: 20, 40, 95, 80

1. If there were 500 points in the 2nd quarter, how many points did the student earn in that quarter?

2. How much did the student's grade increase from the 1st quarter to the 2nd quarter? Use percent.

3. Between which two quarters did the student's grade increase the most?

4. How much did the student's grade increase between these quarters? Use percent.

5. If there were a total of 600 points available in the 4th quarter, how many points did the student earn in that quarter?
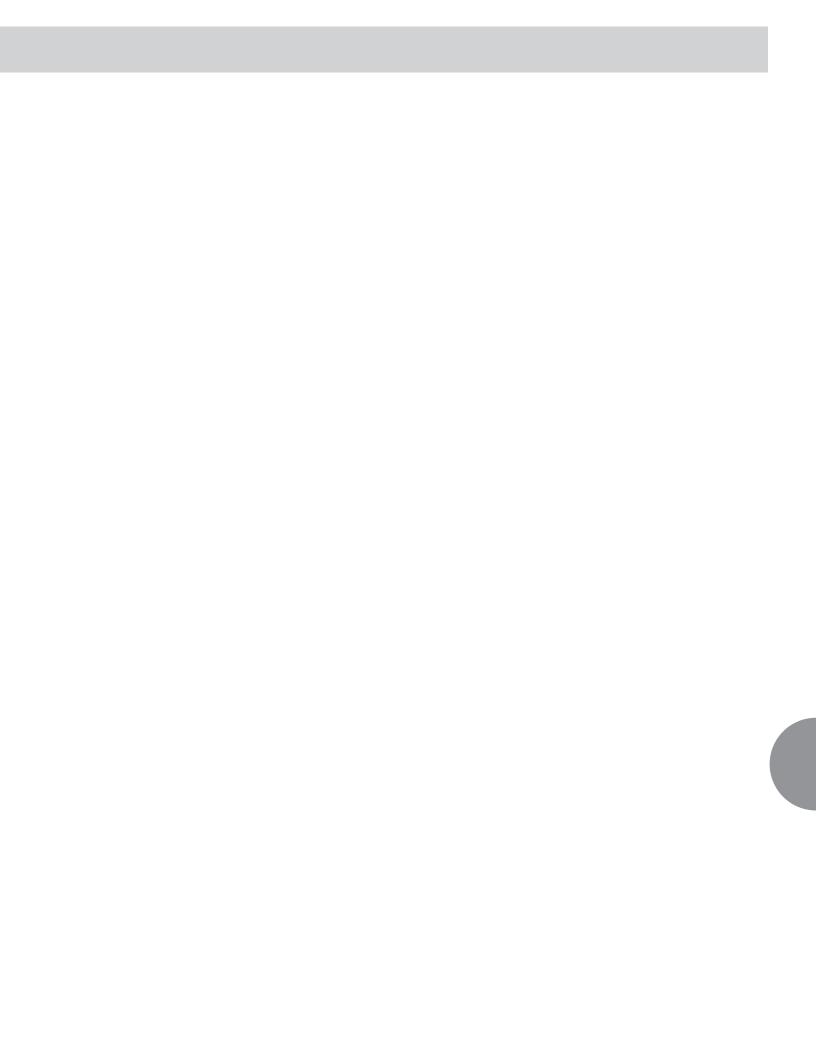
Summary/Closure

A. Vocabulary Words

Write a sentence about circle graphs, using the word percent. Then write another sentence about line graphs, using the word percent.

B. Summarize What We Learned Today

Write a sample problem in which you find the percent value of a whole number. Solve the problem, and check your answer. Then explain in complete sentences how you solved the problem and checked your answer.

Sample problem: _____% of _____ = _____

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Vocabulary Box

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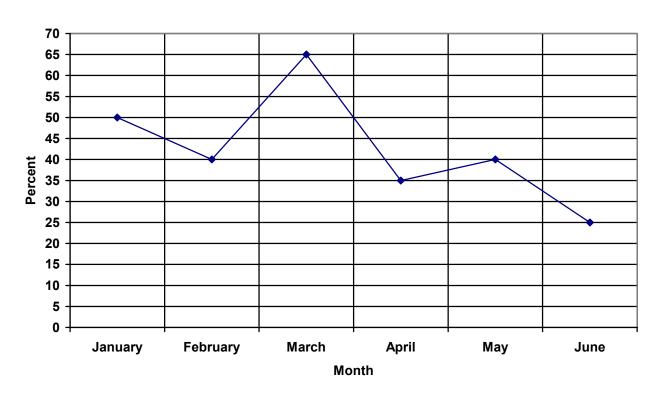
Independent Practice

Directions: Complete the following practice problems on your own. Your teacher will review the answers. Make sure you show all your work and check each answer.

I. Solve each problem.

1. 60% of 750

2. 29% of 810

3. 40 out of 310 as a percent

4. 125% of 70

II.   Use the line graph below to answer the questions.
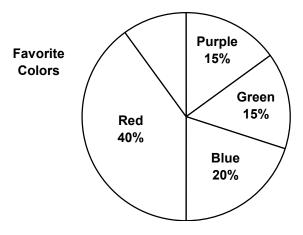
NOTE: The graph is not based on actual information.

President's Approval Rating

1. What percent of voters approved of the president's performance in March?

2. What percent of voters approved of the president's performance in April?

3. If there were 2,000 voters polled, how many approved of the president in May?

4. Between which two months did the president experience the biggest decline in approval?

III. Use the circle graph of a student survey to answer the questions.

Favorite Colors

Purple 15%

Green 15%

Red 40%

Blue 20%
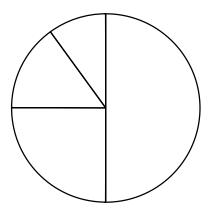
1. Which color did most students prefer?

2. The survey also had some students report that yellow was their favorite color, but that label was left off the graph. What percent of students said that yellow was their favorite color?

3. If 50 students were surveyed, how many said that blue was their favorite color?

Directions: Complete the circle graph.
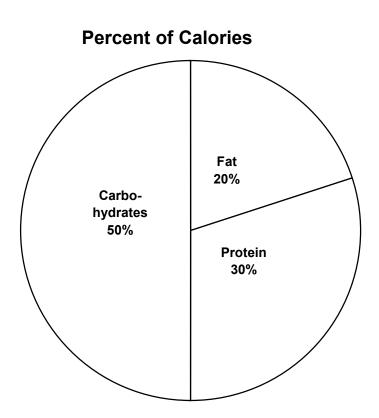
Favorite Subject

A survey was taken of 200 students. One hundred students liked math best, 30 preferred social studies, 20 preferred English, and 50 said science was best. Label the graph with the subjects and correct percents.

Problem Solving

Directions: Use problem-solving strategies to solve each word problem. Show your work, check your answer, and write your final answer in a complete sentence using words from the problem.

The calories eaten by a student in one day came from carbohydrates, fat, and protein. One gram of fat contains 9 calories, while carbohydrates and protein each contain 4 calories per gram. Refer to the circle graph below to answer the questions.

Percent of Calories

Fat
20%

Carbo-
hydrates
50%

Protein
30%

1. In a 2,000 calorie a day diet, how many calories come from carbohydrates?

2. How many grams of carbohydrates is that?

3. If the student eats 1,600 calories a day, how many grams of protein does she eat?

Directions: Use what you know about percents and graphs to answer each question.

1. What is 19% of 63?

2. The percents reported on a circle graph add up to what percent value?

3. A graph shows that 35% of the shoppers in a store are men. If there are 200 shoppers, how many are men?

Lesson Objective: Choose and use an appropriate problem-solving strategy.

Guided Practice on Problem Solving Strategies

Directions: Complete the following practice problems with your partner. Your teacher will review the answers. Make sure you show all your work, check your answers, and write your answers in complete sentences.

1. There are people waiting in line at a store. 6 people are wearing red hats, 5 are wearing blue hats, 2 are wearing green hats, and some are not wearing hats. If the ratio of people wearing red hats is $\frac{3}{10}$, how many people are not wearing hats?

2. Some ink has spilled on the chart below. What number belongs under the ink splotch?

Fraction	Decimal	Percent
/50	0.54	54%

3. A new system of weight measurement has been developed. 3 quicks equal 4 splorks. 2 splorks equal 5 dirgs. 1 dirg equals 8 blops. How many quicks are needed to balance, or equal, 160 blops?

4. A monument wall was built by laying rows of bricks. Each row contains 3 fewer bricks than the row below. In all, 120 bricks were used to build the wall. The wall is made of less than 7 rows of bricks, and all bricks are whole. How many bricks are in the first, or bottom, row? <u>HINT</u>: The last (top) row contains between 15 and 20 bricks.

Problem Solving

<u>Directions</u>: Use problem-solving strategies to solve the word problems. Make sure you show all your work, check your answers, and write your answers in complete sentences.

1. Observe a two-color counter. If the counter is tossed 5 times, what is the probability that it will land with red facing up every time?

2. How many $\frac{1}{2}$s are there in 81?

3. A store manager sets a sales goal for each quarter. The line graph below shows the percents of the sales goals that the employees reached in 4 quarters.

Percent of Sales Goals

In which month did the employees make the sales goal?

If the sales goal for January was $50,000, how much money (in sales) did the employees actually make in January?

4. Insert parentheses into the following equation to make it true.

$6^3 - 4 + 6 \times 12.5 = 91$