LESSON MAKER PRO

Out of 100

Connect fractions, ratios, and percents.

GRADE 6 · 6.N.1.3

6.N.1.3 "Explain that a percent represents parts "out of 100" and ratios "to 100.""

NAME _____ DATE _____

WHAT PERCENT MEANS

A percent tells how many parts out of 100. You can write a percent as a fraction with denominator 100 or as a ratio to 100. To find a whole-number percent from a fraction, make an equal fraction with denominator 100 when possible; some fractions give a decimal percent instead.

WORKED EXAMPLE

Write 7/20 as a percent and as a ratio to 100.

1. Multiply the numerator and denominator by 5: 7/20 = 35/100.
2. 35/100 means 35 parts out of 100, so it is 35%.
3. Write the same comparison as the ratio 35:100.

Answer: 35%; 35:100

PRACTICE 6 problems

1 Write 18% as a fraction with denominator 100 and as a ratio to 100.

ANSWER _____

2 Write 9/25 as a percent.

ANSWER _____

3 Write 0.42 as a percent and as a ratio to 100.

ANSWER _____

4 Write 72:100 as a percent.

ANSWER _____

5 Write 3/4 as a percent and as a ratio to 100.

ANSWER _____

6 Write 8:10 as a percent and as a ratio to 100.

ANSWER _____

APPLY IT Show your work

1 At an arcade, you earn a bonus on 24 of your 50 games. What percent of your games earned a bonus? Write the ratio of bonus games to total games as a ratio to 100.

WORK SPACE

ANSWER _____

2 In a poll, 65% of 200 students choose a school movie night. How many students choose movie night? Explain what 65% tells you about each group of 100 students.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A team completes 16 of 40 missions in a game. A player says the team completed 16% because it finished 16 missions. Explain the error, then find the correct percent and ratio to 100.

WORK SPACE AND ANSWER

ANSWER KEY

Out of 100

GRADE 6 · 6.N.1.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Write 18% as a fraction with denominator 100 and as a ratio to 100.	**18/100; 18:100**
2	Write 9/25 as a percent.	**36%**
3	Write 0.42 as a percent and as a ratio to 100.	**42%; 42:100**
4	Write 72:100 as a percent.	**72%**
5	Write 3/4 as a percent and as a ratio to 100.	**75%; 75:100**
6	Write 8:10 as a percent and as a ratio to 100.	**80%; 80:100**

PART 2 · APPLY IT

1. **48%; 48:100** Multiply 24/50 by 2/2 to get 48/100. That is 48% and a ratio of 48:100.
2. **130 students; 65 out of every 100 students choose movie night.** There are two groups of 100 in 200, and 65 students in each group choose movie night. So 2 × 65 = 130 students.

CHALLENGE

The player used the number of completed missions as the percent without comparing it to 100 missions. Since 16/40 = 2/5 = 40/100, the team completed 40%, and the ratio to 100 is 40:100.

Accept equivalent explanations that correctly compare a part with 100. In the challenge, the explanation must identify why 16 missions does not mean 16%.