Unit: Rates and Percents
Student Handout 7

Name _____

Date _____Pd_____

SOLVING PERCENTS WITH PROPORTIONS

PROPORTIONS

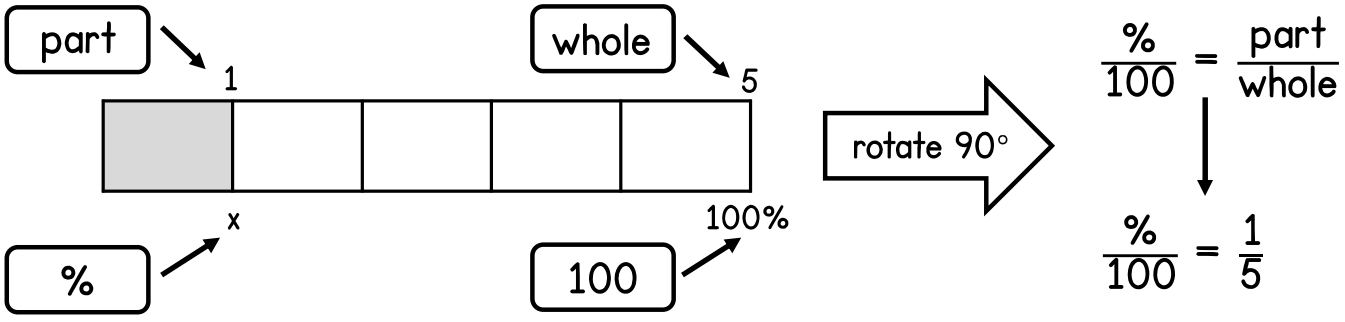
- Two _____ ratios are also called a proportion.
- You can use a proportion to solve for a missing value, x, in two ways:
  - Determining the _____ .
  - _____

Find the missing value in the proportion below.

1.	2.	3.
$\frac{8}{9} = \frac{x}{81}$	$\frac{4}{7} = \frac{32}{x}$	$\frac{x}{20} = \frac{180}{240}$

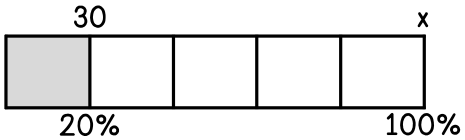
USING PROPORTIONS TO FIND PERCENTS

- Percent is a part to whole ratio, where the whole is always _____.
- Each percent can be modeled on a 10x10 grid and can also be written as a _____.
- You can use a proportion to solve the problem where: $\frac{\%}{100} = \frac{\text{part}}{\text{whole}}$

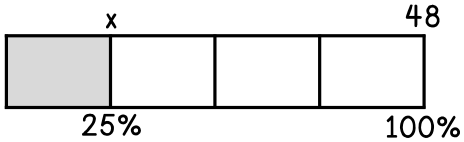


Use your understanding of proportions to set up a percent proportion and solve.

4. Use the tape diagram below to set up a proportion and solve.



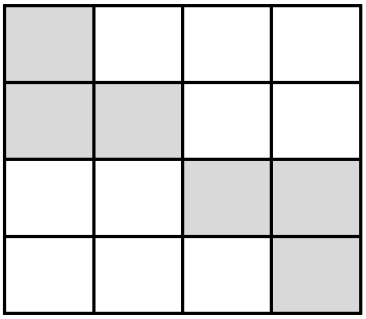
5. Use the tape diagram below to set up a proportion and solve.



Use your understanding of proportions to set up a percent proportion and solve.

6. What percent of 20 is 14?	7. What is 45% of 60?	8. 16 is 25% of what number?
9. What number is 90% of 140?	10. 40% of what number is 46?	11. 12 is what percent of 96?

12. What percent is equivalent to the shaded portion below?



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13. Determine if the answer to the problem below is 24. Explain your reasoning.

75% of what number is 18?

14. Jiro solved the problem, "What is 7% of 150?" by setting up the percent proportion below. What mistake did Jiro make? Solve the problem correctly.

$$\frac{7}{150} = \frac{x}{100}$$

_____

_____

_____

15. Five proportions are given below. Put a check mark next to the proportion(s) Danny could use to solve the problem, "24 is 120% of what number?".

$$\frac{x}{24} = \frac{120}{100} \qquad \frac{24}{x} = \frac{120}{100} \qquad \frac{x}{24} = \frac{12}{10} \qquad \frac{x}{24} = \frac{100}{120} \qquad \frac{x}{24} = \frac{20}{100}$$

Summarize today's lesson:

Unit: Rates and Percents
Homework 7

Name _____

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SOLVING PERCENTS WITH PROPORTIONS

In 1-6, record the problem number in the box with the correct solution. For percent solutions, leave off the percent sign. Then solve questions 7 and 8. Use a tape diagram to help.

60	7	40	75

1. 63 is what percent of 84?

2. What percent of 30 is 18?

3. 12 is 30% of what number?

4. What percent is 36 of 90?

5. What is 28% of 25?

6. 48 is 80 percent of what number?

7. Describe and correct the error Karl made in solving the problem below.

What number is 24% of 80?

$$\frac{80}{x} = \frac{24}{100}$$

$$x = 333\frac{1}{3}$$

8. Ms. Delmar's students solved the problem below. Who solved the problem correctly?

What is 35% of 70?

EMILIANO

$$\frac{35}{70} = \frac{x}{100}$$

$$x = 50$$

LENNON

$$\frac{35}{100} = \frac{x}{70}$$

$$x = 24.5$$

PRIYA

$$\frac{35}{100} = \frac{70}{x}$$

$$x = 200$$

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