



Lesson Check

Do you know HOW?

1. What percent of 70 is 21?
2. What percent of 50 is 60?
3. What is 35% of 80?
4. 75% of what number is 36?
5. **Finance** How much interest will you earn by investing \$1200 at a simple interest rate of 2.5% per year for 6 years?

Do you UNDERSTAND? MATHEMATICAL PRACTICES

6. **Vocabulary** Complete: $p\%$ is equivalent to a fraction with a numerator of p and a denominator of $\underline{\quad}$.
7. **Reasoning** You deposited money in a savings account paying 4% simple interest per year. The first year, you earned \$75 in interest. How much interest will you earn during the following year?
8. **Open-Ended** Give an example of a percent problem where the part is greater than the base.



Practice and Problem-Solving Exercises MATHEMATICAL PRACTICES

A Practice

Find each percent.

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|-------------------------------|-------------------------------|
| 9. What percent of 75 is 15? | 10. What percent of 15 is 75? |
| 11. What percent of 16 is 10? | 12. What percent of 32 is 40? |
| 13. What percent of 48 is 20? | 14. What percent of 88 is 88? |

See Problems 1 and 2.

Find each part.

- | | |
|---------------------------|-------------------------|
| 15. What is 25% of 144? | 16. What is 63% of 150? |
| 17. What is 12.5% of 104? | 18. What is 150% of 63? |
| 19. What is 125% of 12.8? | 20. What is 1% of 1? |

See Problem 3.

21. **Shopping** A tennis racket normally costs \$65. The tennis racket is on sale for 20% off. What is the sale price of the tennis racket?

22. **Hair Care** A beauty salon buys bottles of styling gel for \$4.50 per bottle and marks up the price by 40%. For what price does the salon sell each bottle?

Find each base.

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|---------------------------------|---------------------------------|
| 23. 20% of what number is 80? | 24. 80% of what number is 20? |
| 25. 60% of what number is 13.5? | 26. 160% of what number is 200? |
| 27. 150% of what number is 34? | 28. 1% of what number is 1? |

See Problem 4.

29. **Finance** You deposit \$1200 in a savings account that earns simple interest at a rate of 3% per year. How much interest will you have earned after 3 years?

See Problem 5.

30. **Finance** You deposit \$150 in a savings account that earns simple interest at a rate of 5.5% per year. How much interest will you have earned after 4 years?

B Apply

Tell whether you are finding a *percent*, a *part*, or a *base*. Then solve.

31. What is 9% of 56? 32. What percent of 36 is 96? 33. What is 95% of 150?
34. What is 175% of 64? 35. What percent of 30 is 400? 36. 60 is 250% of what number?

37. **Geography** Water covers approximately 11,800 mi² of Florida, which is about 18% of Florida's area. What is the total area of Florida to the nearest thousand square miles?



38. **Finance** A student has \$1500 to deposit in a savings account. What is the lowest rate that would allow the student to earn \$95 in simple interest in a year?

- (A) 5.5%
(B) 6.25%
(C) 6.33%
(D) 7%

Solve using mental math.

39. 20% of 80 is ?. 40. 120 is 200% of ?. 41. 30 is ? % of 40.

Tell which is greater, *A* or *B*. Assume *A* and *B* are positive numbers.

42. *A* is 20% of *B*. 43. 150% of *A* is *B*. 44. *B* is 90% of *A*.

- © 45. **Think About a Plan** The United States Mint reported at the end of 2006 that the unit cost of producing and distributing a penny was 1.21¢. What percent of the value of a penny is this cost? What can you conclude about the cost of making pennies?

- How can a model help you to visualize the problem?
- How can you use a proportion or the percent equation to solve the problem?

46. **Economics** Would you produce an item if the cost of producing and distributing the item were more than 100% of its value? Explain your answer.

- © 47. **Error Analysis** A student was asked to make up and solve a percent problem, so the student wrote, "What percent of 1.5 is 3?" and solved it as shown at the right. Describe and correct the error in the student's solution.

- © 48. **Writing** Part of a bottle of water has been consumed. Write the steps needed to determine the percent of water that has been consumed.

49. **Finance** A savings account earns simple interest at a rate of 6% per year. Last year the account earned \$10.86 in interest. What was the balance in the account at the beginning of last year?

50. **Furniture** A furniture store offers a set of furniture for \$990. You can also purchase the set on an installment plan for 24 payments of \$45 each. If you choose the installment plan, what percent of the original price will you have paid when you finish? Round to the nearest percent.

$$\begin{array}{l} \frac{a}{b} = \frac{p}{100} \\ \frac{1.5}{3} = \frac{p}{100} \\ 150 = 3p \\ 50 = p \\ 3 \text{ is } 50\% \text{ of } 1.5. \end{array}$$