

To solve problems involving percents, we will use the formula:

$\text{amount} = \text{percent} \cdot \text{base}$ — usually comes after the word "of"
— don't forget to change to a decimal

Examples: Solve each equation.

What number is 60% of 200?

What percent of 325 is 143?

2.2 Solve Word Problems that Involve Percents

Examples: Solve each equation.

78 is 6% of what number?

What number is 2.8% of 220?



2.2 Solve Word Problems that Involve Percents

Examples: Solve each equation.

What percent of 16.8 is 0.42?

1.12 is 140% of what number?



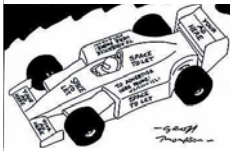
2.2 Solve Word Problems that Involve Percents

Example: The total area of the 50 states and the District of Columbia is 3,618,770 square miles. If Alaska covers 591,004 square miles, what percent is this of the US total (to the nearest hundredth of a percent)?



2.2 Solve Word Problems that Involve Percents

Example: One month before a stock car race, the sale of ads for the official race program was slow. Only 12 pages, or just 60% of the available pages, had been sold. What is the total number of pages devoted to advertising in the program?



2.2 Solve Word Problems that Involve Percents

To solve problems involving percents of increase, we will use the formula:

The one that comes chronologically first

$$\text{amount (of increase/decrease)} = \text{percent (of increase/decrease)} \cdot \text{base}$$

subtract to find

don't forget to change to a decimal

Example: After recent corporate restructuring, Taylor's salary decreased from \$750 per week to \$700 per week. What percent of decrease is this?

2.2 Solve Word Problems with Percentages of Increase/Decrease

Example: Use the table below to find the to determine the percent of increase in life expectancy for females from 1900 to 1998.

Years of Life Expected at Birth (in Years)		
	male	female
1900	46.3	48.3
1998	73.9	79.4

2.2 Solve Word Problems with Percentages of Increase/Decrease

How to Solve a Word Problem:

Step 1: Read the problem until you understand it.

- What are we asked to find?
- What information is given?
- What vocabulary is being used?



Step 2: Assign a variable to represent what you are looking for.

Express any remaining unknown quantities in terms of this variable.

Step 3: Make a list of all known facts and form an equation or inequality to solve.

It may help to make a labeled: diagram, table or chart, graph

Step 4: Solve

Step 5: State the solution in a complete sentence by mirroring the original question.

Be sure to include units when necessary.

Step 6: Check your result(s) in the words of the problem

- Does your solution make sense?

2.2 Solve Word Problems and Applications

Example: To cut down on vandalism, a lot on which a house is to be constructed was completely fenced. The north side of the lot was 205 feet in length. The west and east sides were 275 and 210 feet respectively in length. If 945 feet of fencing was used, how long is the south side of the lot?

2.2 Solve Word Problems and Applications

Example: Torrential rains caused the width of a river to swell to 84 feet. If this was twice its normal size, how wide was the river before the flooding?

2.2 Solve Word Problems and Applications

Example: Over a four-year span, improvements to a Hollywood movie studio tour caused it to take longer. The first year, 10 minutes were added to the tour length. In the second, third and fourth years, 5 minutes were added each year. If the tour now lasts 135 minutes, how long was the tour originally?

2.2 Solve Word Problems and Applications

Example: What is the measure of the angle between each of the "spokes" of the Ferris wheel shown below?



2.2 Solve Word Problems and Applications

Independent Practice

You learn math by doing math. The best way to learn math is to practice, practice, practice. The assigned homework examples provide you with an opportunity to practice. Be sure to complete every assigned problem (or more if you need additional practice). Check your answers to the odd-numbered problems in the back of the text to see whether you have correctly solved each problem; rework all problems that are incorrect.

Read pp.100-109

Homework: pp.110-115 #27-41 odds, 45-57 odds, 61-71 odds, 77, 81

2.2 Problem Solving
