

Percent:

Ex. 1: A basketball player makes 81 out of 100 attempted free throws. Write the ratio of the number of free throws made to the number of total free throws attempted as a percent.

Converting Percents, Decimals, & Fractions

• *To write a fraction as a decimal,* _____

• *To write a percent as a decimal,* _____

• *To write a decimal as a percent,* _____

• *To write a percent as a fraction,* _____

• *To write a fraction as a percent,* _____

Complete the chart. Write all fractions in lowest terms.

Fraction	Mixed Number	Decimals	Percent
		0.36	
	$2\frac{3}{4}$		
			0.006%
		1.64	
			$5\frac{1}{2}\%$
$\frac{3}{5}$			

1. What type of percentages can be written as proper fractions?

2. What type of percentages can be written as improper fractions?

3. A fraction written as a percent is greater than 100% when the numerator is _____ than the denominator.

4. A decimal written as a percent is less than 100% when the decimal is _____ than one.

5. One way in which a retail store manager uses percent is to evaluate the effectiveness of advertising. The following chart compares the reasons customers entered a store on a normal day to those on a day during a newspaper campaign.

Reason	Normal	Ad Day
Advertising	22	49
Previous purchase	15	14
Through a friend	21	25
Phone book	24	19
Driving by	9	3
Other	11	7
<i>Total</i>	102	117

- a. What percent of the total customers came into the store because of advertising on the normal day? Round percent to the nearest tenth.

- b. What percent of the total customers came into the store because of advertising on the ad day? Round percent to the nearest tenth.

7.2 Solving Percent Problems with Equations

of means **multiplication** ·

is means **equals** =

what (or some equivalent) means **the unknown number** (variable)

1. 42% of 50 is what number?

2. 15% of what number is 9?

3. What percent of 150 is 90?

4. What number is 20% of 85?

5. 90% of 150 is what number?

Solving Percent Problems with Proportions 7.3

Percent Proportion: $\frac{\text{amount}}{\text{base}} = \frac{\text{percent}}{100} \Leftrightarrow \frac{a}{b} = \frac{\%}{100}$

Solving Percent Proportions:

1. Find the cross products $\frac{a}{b} = \frac{\%}{100}$
2. Solve for the indicated variable.

Tips:

- The **percent** can be identified by looking for the symbol % or the word *percent*.
- The **base** usually follows the word *of*.
- The **amount** is the part compared to the whole.

1. 42% of 50 is what number?

2. 15% of what number is 9?

3. What percent of 150 is 90?

4. What number is 20% of 85?

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7.4 Solving Applications Involving Percent

Tips:

- State the problem in words, then translate to an equation/proportion.
- Solve for the variable.

$$\text{Percent Increase} = \frac{\text{amount of increase}}{\text{original amount}}$$

$$\text{Percent Decrease} = \frac{\text{amount of decrease}}{\text{original amount}}$$

7.5 Percent and Problem Solving: Sales Tax, Commission, and Discount

sales tax = tax rate • purchase price

total price = purchase price + sales tax

commission = commission rate • sales

amount of discount = discount rate • original price

sale price = original price – amount of discount

7.6 Percent and Problem Solving: Simple Interest

Calculating Simple Interest

Interest is money charged for using other people's money.
 Money borrowed, loaned, or invested is called the **principal amount**, or simply **principal**.
 The **interest rate** is the percent used in computing the interest (usually per year).
Simple interest is interest computed on the original principal.

Simple Interest

simple interest = principal • rate • time
 or

$$I = P \cdot R \cdot T$$
 where the rate is understood to be per year and time is in years.

Finding the Total Amount of a Loan or Investment

total amount (paid or received) = principal + interest

Finding the Monthly Payment of a Loan

monthly payment = $\frac{\text{principal} + \text{interest}}{\text{total number of payments}}$

Complete the chart.

	Principal	Rate	Time	Simple Interest	Total Amount
1.	\$200	8%	2 years		
2.	\$160	2.5%	3 years		
3.	\$5000	4.75%	6 months		
4.	\$375	5%	18 months		
5.	\$550	16%	5 years		

1. \$65,000 is borrowed to buy a house. If the simple interest rate on the 3-year loan is 10.25%, find the total amount paid on the loan.

7. Find the monthly payment on a \$3500 5-year loan if the interest on the loan is \$1254.55.