6th Grade CCA Unit #6: Percents

Unit #6: Percents

Resources: Big Ideas: Chapter 6

Common Core Standards: 7.RP.3; 7.EE.3

Number	Learning Targets	Common Core Standard	Resources
1	I can write percents as decimals and vice versa.	7.EE.3	6.1
2	I can compare and order fractions, decimals, and percents.	7.EE.3	6.2
3	I can use the percent proportion to find parts, wholes, and percents.	7.RP.3	6.3
4	I can use the percent equation to find parts, wholes, and percents.	7.RP.3; 7.EE.3	6.4
5	I can find percents of increase and decrease.	7.RP.3	6.5
6	I can use percent of discounts and markups to find selling prices of items.	7.RP.3	6.6
7	I can use simple interest to find interest earned or paid and annual interest rates.	7.RP.3	6.7

My Practice:

Number	Pre-test:	Exit slip scores	Day #2 Homework	Extra Targeted Practice	Post-test:
1	_____/3				_____/3
2	_____/4				_____/5
3	_____/2				_____/5
4	_____/2				_____/6
5	_____/2				_____/6
6	_____/5				_____/7
7	_____/2				_____/5

My Final Pretest Score: _____ /20 **My Final Pretest Percent _____ %**

My Final Posttest Score: _____ /40 **My Final Posttest Percent: _____ %**

Between the Pre and Post test scores, I increased by _____ % !!

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Unit 6: Percents Extended Homework

This homework is designed to expand your thinking and practice mathematical explanations. You need to show an attempt on every problem as well as an explanation of your thinking.

You may use a calculator when applicable.

6.1 Percents and Decimals Extended Homework

Complete #40 and #50 (pg. 219) from the online textbook from section 6.1

40.)	50.)

6.2 Comparing and Ordering Fractions, Decimals, and Percents Extended Homework

Complete #31 and #32 (pg. 225) from the online textbook from section 6.2

31.)	32.)

6.3 The Percent Proportion Extended Homework

Complete #27 and #29 (pg. 231) from the online textbook from section 6.3

27.)	29.)

6.4 The Percent Equation Extended Homework

Complete #28 and #29 (pg. 237) from the online textbook from section 6.4

28.)	29.)

6.5 Percents of Increase and Decrease Extended Homework

Complete #29 and #30 (pg. 245) from the online textbook from section 6.5

29.)	30.)

6.6 Discounts and Markups Extended Homework

Complete #21 and #22 (pg. 251) from the online textbook from section 6.6

21.)	22.)

6.7 Simple Interest Extended Homework

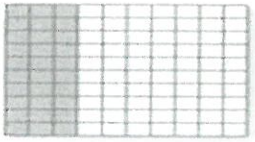
Complete #35 and #37 (pg. 257) from the online textbook from section 6.7

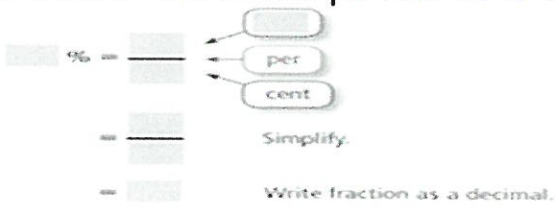
35.)	37.)

6.1 Writing Percents as Decimals Student Notes

POD: Write the percent shown by the model. Write the percent as a decimal.

a.





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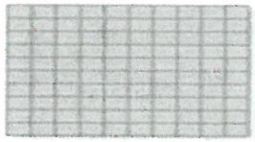

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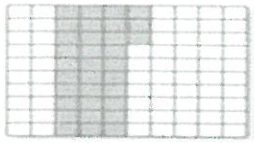

Objective: To convert between percents and fractions

How to Write a Percent Greater Than 100 Fraction:

1.) Write the percent as a fraction with a denominator of 100.
2.) Simplify the fraction if needed (this is your fraction answer).

How to Write a Percent Less Than 100 Fraction:

1.) Write the percent as a fraction with a denominator of 100.
2.) To get rid of the decimal in the numerator, move the decimal point to the RIGHT as many spaces as needed. This is the number of zeros you need to add to the denominator.

How to Write a Fraction as a Percent

1.) Convert the fraction to decimal (divide)
2.) Multiply by 100 OR Move the decimal point 2 places to the RIGHT.
3.) Add zeroes if needed.
4.) Or, change the denominator to 100 and change the numerator

Examples:

Write each percent as a decimal and fraction in simplest form

Percent	Decimal	Fraction
1.)		

PERCENT	DECIMAL	FRACTION
2.)		
3.)		
4.)		
5.)		
6.)		

Name _____ Date _____

6.1 Writing Percents as Decimals Homework Day 1

Write the percent as a decimal.

1. 5%

2. 16.75%

3. 186%

4. 416%

5. 100.8%

6. 5.17%

7. 0.4%

8. 0.04%

9. Describe and correct the error in writing 1.475% as a decimal.

✗ 1.475% = 1.475% = 147.5

Write the decimal as a percent.

10. 0.01

11. 0.04

12. 0.312

13. 1.2

14. 1.08

15. 0.003

16. 0.025

17. 0.0245

18. Fifty-four percent of the students in your class have moved at least one time. Write this percent as a decimal.

19. On a history test, you get 86 out of a possible 100 points. Write a decimal and a percent that represent a score of 86 out of 100.

20. Of the fluids that you drink on a typical day, $\frac{1}{10}$ is milk and 50% is water. How many times more water do you drink than milk?

Write the percent as a fraction in simplest form and as a decimal.

21. 21%

22. 75%

23. 64%

24. 85%

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Name _____ Date _____

6.1 Writing Percents as Decimals Homework Day 2

Write the decimal as a percent.

1. 0.222 **2.** 0.929 **3.** 2.5 **4.** 0.005

Write the percent as a fraction in simplest form and as a decimal.

5. 9% **6.** 55% **7.** 31.25% **8.** 44.65%

9. About 36% of the students at a middle school are seventh graders. What percent are *not* in seventh grade?

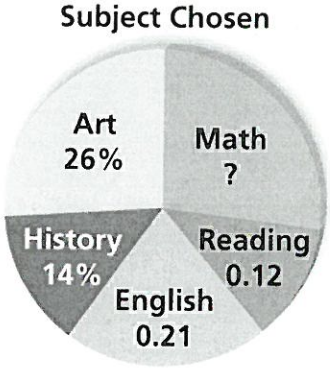
10. The percents of three types of tickets collected at the gate for a high school football game are shown.

a. Write the percents as decimals and as fractions.

Ticket type	Student	Adult	Senior (65 and older)
Percent	48%	28%	14%

b. There is one other type of ticket that is not shown. It is a ticket for a child under 5. What percent of the tickets were of this type?

11. Students in an after-school enrichment program chose one of five subject areas.



a. What percent chose English or reading?

b. What percent chose English or history?

c. How many times more students chose English than reading?

d. What percent chose math? Write the percent as a decimal.

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6.2 Comparing and Ordering Percents, Fractions, and Decimals
Student Notes

POD:

Write as a decimal
1.) 125% =

Write as a fraction
2.) 32% =

Write as a decimal
3.) $\frac{35}{100}$ =

Objective: Students will be able to convert between percents, decimals, and fractions and order them and compare them.

How to Order Percents, Fractions, and Decimals:

1.) Convert all the numbers to same units.
2.) Order from least to greatest
3.) Write the order using original numbers.

Examples:

1.) Order from least to greatest. Circle the form you are going to convert the numbers.

Percent Fraction Decimal

$\frac{3}{10}$, 0.74, 29%, $\frac{11}{25}$

Show Your Work!!

Place the numbers in order, least to greatest on the number line

2.) Order from least to greatest. Circle the form you are going to convert the numbers.

Percent Fraction Decimal

68%, 0.63, $\frac{14}{19}$

Show Your Work!!

Place the numbers in order, least to greatest on the number line

3.) Which Number is greater?

$\frac{1}{8}$ or 14% Show your work

4.) The table shows the portion of each age group that recycles plastic. Order the groups by the portion that recycle from least to greatest.

Age Group	Echo Boomers	Gen X	Baby Boomers	Matures
Portion that Recycles	51%	.57	.61	6/10

SHOW WORK

Name _____ Date _____

6.2 Compare & Order Fractions, Decimals and Percents Homework Day 1

Tell which number is greater.

1. $\frac{2}{3}$, 66%

2. 0.482, 49%

3. 16%, 0.108

4. Describe and correct the error in comparing 0.7% and $\frac{17}{25}$.

$\times 4$

$\frac{17}{25} = \frac{68}{100} = 0.68\%$

$\times 4$

0.7% is greater than 0.68%, so 0.7% is the greater number.

Order the numbers from least to greatest.

5. 0.64, $\frac{13}{20}$, 63%

6. 45%, 0.46, $\frac{11}{25}$

7. $3\frac{2}{3}$, 362%, 3.66, $3\frac{3}{5}$, 36

8. You use 8 fluid ounces of fruit juice in a recipe to make 64 fluid ounces of fruit punch. A fruit punch you can buy at the store has 10% real fruit juice. Which has a higher percent of fruit juice?

9. To earn a bonus in a video game, you must find at least 60% of the hidden gems. You find 25 out of 40 gems. Do you get the bonus? Explain.

10. The table shows the portion of students at a middle school that are in each grade. Order the grades from the least to the greatest number of students.

Grade	6	7	8
Portion of students	$33\frac{1}{3}\%$	0.3125	$\frac{17}{48}$

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Name _____ Date _____

6.2 Compare & Order Fractions, Decimals and Percents Homework Day 2

Tell which number is greater.

1. $\frac{1}{4}$, 22%
2. $\frac{5}{9}$, 55%
3. 3.2, 32%
4. 99.9%, 1

Use a number line to order the numbers from least to greatest.

5. $\frac{1}{3}$, 0.3, 33%, $\frac{8}{25}$, 33.6%
6. 210%, 2.2, $2.\overline{2}$, $\frac{43}{20}$

7. Describe a process that you can use to find a decimal whose value is between 31% and 32%.

8. Order the periods of time from least to greatest.

   1% of an hour $\frac{2}{3}$ of a minute 0.0004 of a day

9. The table shows the portions of the U.S. population that lived in Florida in certain years.

   a. Order the portions from least to greatest.

Year	1860	1910	1960	2010
Portion of U.S. Population in Florida	0.45%	0.0082	$\frac{1}{36}$	$\frac{1}{16}$

   b. Since 1860, how has the population of Florida increased compared to the population of the United States? Why do you think this happened?

   c. Do you think this will always happen? Explain your reasoning.

10. Arsenic is toxic to humans. The greatest amount of arsenic that is allowed in drinking water is 10 parts per billion. A test shows that a source of drinking water contains 0.000002% arsenic. Is this an allowable amount? Explain.

6.3 Solving Percent Problems Using Proportions STUDENTS NOTES

POD: Use mental math to solve each problem.

1.) 20% of 120

2.) 10% of 240

Objective: Students will find percents and wholes using proportions.

Proportions for Solving Percent Problems:

For either proportion, solve using cross products.

1.) $\frac{part}{whole} = \frac{\%}{100}$

2.) $\frac{is}{of} = \frac{\%}{100}$

Examples:

Use a proportion to solve. Round to the nearest tenth if necessary.

1.) What percent of ___ is ___? $\frac{is}{of} = \frac{\%}{100}$	2.) ___ is what percent of ____? $\frac{is}{of} = \frac{\%}{100}$
3.) ____ is ____ of what number? $\frac{is}{of} = \frac{\%}{100}$	4.) ____ of ____ is what number? $\frac{is}{of} = \frac{\%}{100}$

5.) In a school band of ____ students, ____ students are 7th graders. What percent of the band is 7th graders?

$$\frac{is}{of} = \frac{\%}{100}$$

6.) Of ____ seventh-grade students, _____ earn the Presidential Physical Fitness Award. How many students earn that award?

Name: _____

6.3 Solving Percent Problems Using Proportions Homework Day 1

Directions: Use proportions to solve each problem.

1.) 48 is 60% of what number?	2.) What is 175% of 85?
3.) What percent of 90 is 50?	4.) 76 is 80% of what number?
5.) What is 50% of 42.88?	6.) 96 is 160% of what number?
7.) The sale price of a bicycle is $120. This is 75% of the original price. Find the original price.	
8.) There are 1,295 students attending a small university. There are 714 women enrolled. What percentage of students are women?	

Name _____ Date _____

6.3 6.3 Solving Percent Problems Using Proportions
Homework Dav 2

Write and solve a proportion to answer the question.

1. 40% of what number is 15?

2. 24 is 0.6% of what number?

3. What percent of 75 is 27?

4. 17 is what percent of 68?

5. Of the 60 seeds that you plant, 80% germinate. How many seeds germinate?

6. You are charged 6% sales tax. You purchase a new bicycle and pay $27 in sales tax. What is the purchase price of the bicycle?

Write and solve a proportion to answer the question.

7. 0.2 is what percent of 16?

8. What number is 45% of $\frac{5}{9}$?

9. You are making 28 name badges for a committee. You complete 75% of these on Monday. How many do you have left to complete on Tuesday?

10. You and your friend are selling tickets for the orchestra concert. On Thursday, you sold 15 tickets and your friend sold 10 tickets.

a. What percent of the tickets sold on Thursday did you sell?

b. On Friday, you sold 9 tickets and your friend sold 16 tickets. What percent of the tickets sold on Friday did you sell?

c. What percent of the total tickets sold on Thursday and Friday did you sell?

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6.4 Solving Percent Problems Using Equations Student Notes

POD: Use proportions to solve.

1.) 24 is what percent of 32?

2.) What number is 62% of 50?

Objective: Students will write and solve percent equations.

How to Solve Percent Problems Using Equations:

1.) Translate the problem into an algebraic equation:
   a. "is" means = (equal)
   b. "of" means · (multiply)
   c. "what", "what number", or "what percent" is the unknown, represent the unknown with a variable
2.) Solve the equation. **(Make sure you turn percents into decimals!!!)**

Examples

Write an equation, then solve.

1.) What number is 39% of 377?	2.) 27% of 60 is what number?
3.) 40% of what number is 30?	4.) 39 is what percent of 260?
5.) The price of a new version of a computer game is 120% of the price of the original version. The original version cost $48. What is the cost of the new version?	

6.) Nine hundred thirty-six students, 65% of the entire student body, attended the football game. What is the size of the student body?

7.) During a telephone survey, 320 people, or 25% of those called, said they were listening to the same station at the time of the call. How many people were called?

Name: _____

6.4 Solving Percent Problems Using Equations Homework Day 1

Directions: Use equations to solve each problem.

1.) What percent of 64 is 48?	2.) 16% of 130 is what number?
3.) 25% of what number is 24?	4.) What percent of 18 is 12?
5.) 48% of 83 is what number?	6.) 40% of what number is 136?
7.) What percent of 530 is 107?	8.) 74% of 643 is what number?
9.) 62% of what number is 84?	10.) What percent of 84 is 50?

11.) You make 72 cookies for a bake sale. This is 20% of the cookies at the bake sale. How many cookies are there altogether? (Use either method to solve)

12.) A ski resort in New Hampshire begins the season with 60% of its trails open. There are 27 trails open. How many trails does the ski resort have? (Use either method to solve)

Name _____ Date _____

6.4 Solving Percent Problems Using Equations
Homework Day 2

Write and solve an equation to answer the question.

1. What number is 70% of 120?

2. 30 is what percent of 120?

3. 112 is 56% of what number?

4. 128 is what percent of 80?

5. There are 35 competitors in a marathon. Sixty percent of these finished the race in under four hours. How many competitors finished the race in under four hours?

6. Your class is going on a field trip. Twenty-four students have turned in their permission slips so far. This is 80% of the students in the class. How many students are in the class?

7. You take a test with 32 questions on it. You answer 24 questions correctly. What percent of the questions do you answer correctly?

Tell whether the following statement is *true* or *false*. Explain your reasoning.

8. 120% of a whole number is always greater than the number.

9. You can find 0.5% of a number by multiplying the number by $\frac{5}{100}$.

10. You are in charge of the seventh grade graduation dinner. The table shows the results of a survey of students' meal preferences.

Choice	Percent
Chicken Nuggets	25%
Spaghetti	?
Pizza	45%
Fish Sticks	?

   a. 144 students chose pizza. How many students responded to the survey?

   b. How many students chose chicken nuggets?

6.5 Percent of Change Student Notes

POD:

1.) 64 people completed a survey about their favorite pets. If eight people said their favorite pet was a fish, what percent of people had a different favorite pet? (Use equation)

2.) 20% of people said that green was their favorite color. If ten people said this, how many people took part in the survey? (Use proportion)

Objective: Students will be able to find the percent of increase or decrease in real life problems.

Vocabulary:

1. percent of change - the percent a quantity increases or decreases from its original amount

2 Options for Determining the Percent of Change:

(big number-little number) ☺

1.) $\frac{\text{amount of change}}{\text{original amount}} = \frac{\text{percent of change}}{100}$

OR

2.) $\text{percent of change} = \frac{\text{amount of change}}{\text{original amount}}$

Examples: Find each percent of change. Tell whether the change is an increase or decrease.

1. from 96 to 78

2. From 87 to 108

3. Last year, a school had 632 students. This year the school has 670 students. Find the percent of increase in the number of students.

4. A tent is on sale for $48.75. Find the percent of discount if the original price for the tent was $74.99.

5. Kayla was 36 in. at age 3. At age 5 she is 42 in. tall. To the nearest percent, what is the percent of change in Kayla's height?

6. You estimate that the length of your classroom is 16 feet. The actual length is 21 feet. Find the percent error.

Name: _____

6.5 Percent of Change Homework Day 1

Directions: Find the percent of change. Decide whether it's an increase or decrease. Round to the nearest tenth of a percent if necessary.

1.) from 18 to 80

2.) from 83 to 50

3.) from 75 to 90

4.) Zack shot an 86 on the golf course on Monday. On Friday he shot a 95. What is the percent of change?

5.) Kelly Dyer became a great writer. She had a picnic each year to celebrate the date of her first published work. The 1st year 50 people came. The 2nd year 30 people came. What is the percent of change?

6.) Angela Smyre became a famous architect. She made $90,000 in 2004. In 2005 she made $120,000. What is the percent of change?

7.) A computer that cost $1,099 last year costs $999 this year. What is the percent of change?

8.) Lisa LaViers became a great singer. She was so famous she had 12 body guards at one concert. At the next concert she had 15 body guards. What is the percent of change?

Name _____ Date _____

6.5 6.5 Percent of Change Homework Day 2

Identify the percent of change as an *increase* or a *decrease*. Then find the percent of change. Round to the nearest tenth of a percent, if necessary.

1. 5 cups to 8 cups

2. 150 pounds to 135 pounds

3. $\frac{1}{3}$ to $\frac{2}{3}$

4. $\frac{1}{3}$ to $\frac{1}{6}$

5. Yesterday your bus ride to school took 10 minutes. Today your bus ride took 12 minutes. What is the percent of change?

6. Yesterday 270 concert tickets were sold. Today 216 tickets were sold.

a. Find the percent of change in the number of tickets sold from yesterday to today.

b. Use the percent of change from part (a) to predict the number of tickets sold tomorrow. Round to the nearest ticket, if necessary.

c. Find the predicted percent of change in the number of tickets sold from yesterday to tomorrow. Round to the nearest tenth of a percent, if necessary.

7. This month a band has 6 musicians. This is a 50% increase from the number of musicians in the band last month. How many musicians were in the band last month?

Section 6.6: Discounts and Markups Student Notes

POD: Use an equation to solve.

1.) What percent of 54 is 18?

2.) 24 is 64% of what number?

Objective: Students will use percent of discounts and markups to find selling prices of tems.

Vocabulary:

1. sales tax – a percent you pay of a purchase price
2. discount – the amount of decrease in a price
3. markup – the increase from what the store pays to the selling price.

Formulas:

1. discount = discount rate • original price
2. sale price = original price - discount
3. sales tax = tax rate • purchase price
4. markup = markup rate • original selling price
5. total price = sales price + sales tax

Examples:

1.) Shoes priced at $74.95 are marked 25% off. Find the sales price.

discount =	sale price =

2.) A desk costs $159.99 and the sales tax rate is 6%. Find the total price.

sales tax =	total price =

3.) A $5 cap has a 70% markup. What is the markup and final selling price?

markup =	selling price =

4.) Shoes are now $33 after a 40% discount. What is the original price of the shoes?

5.) A playstation game that costs $50.50 are marked 25% off. The sales tax rate is 7%. Find the discount, sale price, sales tax, and total price.

discount =	sale price =
sales tax =	total price =

Name: _____

Section 6.6 Percents and Markups Day 1 Homework

1.) A tv has a sale price of $450 and has a sales tax of 6%. Find the total price.

Sales tax:	Total price:

2.) Shoes have an original price of $40 and they are marked 25% off. Find the discount and sales price.

Discount:	Sales price:

3.) A store receives a CD for $5 and has a 95% mark-up on it. What is the mark-up and sales price?

Mark-up:	Sales price:

4.) A wii is originally $280 but it is 20% off. Find the discount and sales price.

Discount:	Sales price:

5.) Jeans that are originally $28 are marked 15% off. The sales tax rate is 7.5%. Find the discount, sale price, sales tax, and total price.

Discount:	Sales price:
Sales tax:	Total price:

Name _____ Date _____

6.6 Discounts & Markups Homework Day 2

Find the cost to store or selling price.

1. Cost to store: $65

   Markup: 25%

   Selling price: ?

2. Original price: $500

   Discount: ?

   Sale price: $175

3. The cost to a store for a box of cereal is $2.50. The store is selling the box of cereal for $3.50. What is the percent of markup?

4. A store pays $120 for a bicycle.

   a. The store has a 60% markup policy. What is the selling price of the bicycle?

   b. The store is now going out of business and is selling all of the bicycles at a 30% discount. What is the sale price of the bicycle?

   c. Will the store make money or lose money on the bicycle? How much?

5. The selling price of a skateboard is $147. The store has a 75% markup policy. What is the cost of the skateboard to the store?

6. You buy a watch for $60.

a. There is a 6% sales tax. What is your total cost for the watch?

b. Your friend buys the same watch a month later. It is now sold at a discount of 15%. What is the new sale price? (Use the original $60)

c. What is your friend's total cost for the watch including tax?

Section 6.7 Simple Interest Student Notes

POD:

1.) A pair of shoes costs $59.95 and is 25% off. If there is an 8.5% sales tax, what is the final price for the shoes?

Objective: Students will be able to use the simple interest formula to find interest earned or paid, annual interest rates, and amounts paid on loans.

Formula:

Examples: Find the simple interest and your total balance.

1.) principal = $500, interest rate = 3.5%, time = 2 years

2.) Stephanie puts $2,000 into her bank account which pays 4.5% interest. How much interest will she have earned in 6 months? What will be the total in her bank account?

3.) Suppose you deposit money in a savings account. The interest rate is 6% per year. If you earn $42 in interest after 7 months, how much money did you deposit in the bank at the beginning?

4.) Jacob borrowed $5,000 for a period of 3 months. If he had to pay $118.75 in interest, what interest rate did he receive?

5.) Megan bought a computer system for $1,200 and the bank charges an interest rate of 18% per year. If she has to spend $324 in interest, how long is her loan?

6.) You borrow $600 to buy a violin. The simple interest rate is 15%. You pay off the loan after 5 years. How much do you pay for the loan.

Name _____ Date _____

6.7 Simple Interest Homework Day 1

An account earns simple interest. (a)Find the interest earned. (b)Find the account's balance.

1. $200 at 3% for 5 years

2. $750 at 8% for 2 years

Find the annual interest rate.

3. $I = \$18, P = \$150, t = 6$ years

4. $I = \$164.50, P = \$940, t = 2.5$ years

Find the amount of time.

5. $I = \$72, P = \$600, r = 4\%$

6. $I = \$174, P = \$1450, r = 8\%$

Find the total amount paid for the loan.

7. $1000 at 8% for 5 years

8. $3500 at 10% for 2 years

9. You deposit $2000 in a savings account earning 5% simple interest. How long will it take for the balance of the account to be $3800?

10. Your parents charge a family ski trip of $3000 on a credit card.

a. The simple interest rate is 20%. The charges are paid after 6 months. What is the amount of interest paid?

b. What is the total amount paid for the ski trip?

Name _____ Date _____

6.7 Simple Interest Homework Day 2

An account earns simple interest. (a) Find the interest earned. (b) Find the balance of the account.

1. $2600 at 3.2% for 4 years

2. $75,000 at 8.5% for 3 months

Find the annual interest rate.

3. $I = \$41.80$, $P = \$440$, $t = 2$ years

Find the amount of time.

5. $I = \$9.90$, $P = \$360$, $r = 5.5\%$

9. You deposit $2000 in an account. The account earns $120 simple interest in 8 months. What is the annual interest rate?

10. You put money in two different accounts for one year each. The total simple interest for the two accounts is $140. You earn 6% interest on the first account, in which you deposited $1000. You deposited $800 in the second account. What is the annual interest rate for the second account?

11. You deposit $1200 in an account.

a. The account earns 2.7% simple interest rate. What is the balance of the account after 3 months?

b. The interest rate changes, and your new balance now earns 2% simple interest rate. What is the balance of the account after the next 6 months? Round to the nearest penny, if necessary.

Chapter 6 Answer Keys:

6.1 Homework Day 1:

1. 0.05	**2.** 0.1675	**3.** 1.86	**4.** 4.16	**5.** 1.008	**6.** 0.0517	**7.** 0.004	**8.** 0.0004
9. The decimal point is moved to the right instead of the left. 1.475% = 01.475% = 0.01475							**10.** 1%
11. 4%	**12.** 31.2%	**13.** 120%	**14.** 108%	**15.** 0.3%	**16.** 2.5%	**17.** 2.45%	**18.** 0.54
19. 0.86, 86%		**20.** 5 times	**21.** $\frac{21}{100}$; 0.21	**22.** $\frac{3}{4}$, 0.75		**23.** $\frac{16}{25}$, 0.64	**24.** $\frac{17}{20}$, 0.85

6.1 Homework Day 2:

1. 22.2%	**2.** 92.9%	**3.** 250%	**4.** 0.5%	**5.** $\frac{9}{100}$, 0.09	**6.** $\frac{11}{20}$, 0.55	**7.** $\frac{5}{16}$, 0.3125	**8.** $\frac{893}{2000}$, 0.4465
9. 64%	**10. a.** 0.48, $\frac{12}{25}$; 0.28, $\frac{7}{25}$; 0.14, $\frac{7}{50}$ **b.** 10%				**11. a.** 33% **b.** 35% **c.** $1\frac{3}{4}$ times **d.** 27%, 0.27		

6.2 Homework Day 1:

1. $\frac{2}{3}$	**2.** 49%	**3.** 16%	**4.** $\frac{68}{100}$ = 68%, not 0.68%. So, 68% > 0.7% and $\frac{17}{25}$ is the greater number.		
5. 63%, 0.64, $\frac{13}{20}$		**6.** $\frac{11}{25}$, 45%, 0.46	**7.** $3\frac{3}{5}$, 362%, 3.66, $3\frac{2}{3}$, 36		**8.** the punch that you made
9. yes; 62.5% is greater than 60%.			**10.** grade 7, grade 6, grade 8		

6.2 Homework Day 2:

1. $\frac{1}{4}$	**2.** $\frac{5}{9}$	**3.** 3.2	**4.** 1	**5.** 0.3, $\frac{8}{25}$, 33%, $\frac{1}{3}$, 33.6%	**6.** 210%, $\frac{43}{20}$, 2.2, $2.\overline{2}$
7. *Sample answer:* Write 31% and 32% as the decimals 0.31 and 0.32. Graph 0.31 and 0.32 on a number line. Then identify a decimal between them, such as 0.315.					
8. 0.0004 of a day, 1% of an hour, $\frac{2}{3}$ of a minute	**9. a.** 0.45%, 0.0082, $\frac{1}{36}$, $\frac{1}{16}$		**b.** The population of Florida has grown faster than the population of the U.S.; *Sample answer:* People tend to move to Florida because it is a nice place to live.		
c. *Sample answer:* no; Some day Florida will become too crowded to keep growing.	**10.** no; $0.000002\% = 0.00000002 = \frac{2}{100{,}000{,}000} = \frac{20}{1{,}000{,}000{,}000}$ = 20 parts per billion. Because this is greater than 10 parts per billion, it is not an allowable amount.				

6.3 Homework Day 1:

1.) 80	2.) 148.75	3.) 55.6%	4.) 95	5.) 21.44	6.) 60	7.) $160	8.) about 55%

6.3 Homework Day 2:

1. $\frac{15}{w} = \frac{40}{100}$; 37.5	**2.** $\frac{24}{w} = \frac{0.6}{100}$; 4000	**3.** $\frac{a}{100} = \frac{27}{75}$; 36%	**4.** $\frac{17}{68} = \frac{p}{100}$; 25%	**5.** 48	**6.** $450
7. $\frac{0.2}{16} = \frac{p}{100}$; **1.25%**	**8.** $\frac{\frac{a}{5}}{9} = \frac{45}{100}$; $\frac{1}{4}$	**9.** 7 left to complete	**10. a.** 60% **b.** 36% **c.** 48%		

6.4 Homework Day 1:

1.) 75%	2.) 20.8	3.) 96	4.) 66.7%	5.) 39.8	6.) 340	7.) 20.2%	8.) 475.8	9.) 135.5
10.) 59.5%		11.) 360 cookies		12.) 45 trails				

6.4 Homework Day 2:

1. $a = \frac{70}{100} \cdot 120$; 84	**2.** $30 = p \cdot 120$; 25%	**3.** $112 = \frac{56}{100} \cdot w$; 200	**4.** $128 = p \cdot 80$; 160%	**5.** 21 competitors
6. 30 students	**7.** 75%	**8.** true; To find 120% of a number, multiply it by $\frac{120}{100}$ which is a number greater than 1.	**9.** false; To find 0.5% of a number, multiply it by $\frac{0.5}{100}$ or $\frac{5}{1000}$	
10. a. 320 students **b.** 80 students				

6.5 Homework Day 1:

1.) 344.4% I	2.) 39.8% D	3.) 20% I	4.) 10.5% I	5.) 40% D	6.) 33.3% I	7.) 9.1% D	8.) 25% I

6.5 Homework Day 2:

1. increase; 60%	**2.** decrease; 10%	**3.** increase; 100%	**4.** decrease; 50%	**5.** 20% increase	**6a.** 20% decrease
6b. 173 tickets	**6c.** 35.9% decrease	**7.** 4 musicians			

6.6 Homework Day 1:

1.) Tax: $27 TP: $477	2.) D: $10 SP: $30	3.) M: $4.75 SP: $9.75	4.) D: $56 SP: $224
5.) D: $4.20 SP: $23.80 Tax: $1.79 TP: $25.59			

6.6 Homework Day 2:

1. $81.25	**2.** 65%	**3.** 40%	**4.a.** $192 **b.** $134.40 **c.** make money; $14.40	**5.** $84	**6a.** $63.60
6b. $51 **c.** $54.06					

6.7 Homework Day 1:

1. a. $30 **b.** $230	**2. a.** $120 **b.** $870	**3.** 2%	**4.** 7%	**5.** 3 years	**6.** 1.5 years	**7.** $1400
8. $4200	**9.** 18 years	**10. a.** $300 **b.** $3300				

6.7 Homework Day 2:

1. a. $332.80 **b.** $2932.80	**2.a.** $1593.75 **b.** $76,593.75	**3.** 4.75%	**5.** 6 months	**9.** 9%	**10.** 10%	
11. a. $1208.10 **b.** $1220.18						