7A – CHAPTER 6: PERCENTAGES – NOTE PACKET

NAME: _____ HOUR: _____

Lesson 6.1: Using the Percent Proportion

Vocabulary	
Term	Definition
Percent Proportion	$\frac{\text{part}}{\text{whole}} = \frac{\text{percent}}{100}$

Key Phrases	
Is: part	Of: whole

1a. Fifteen is what percent of 20?

$\frac{15}{20} = \frac{n}{100}$ 75%

1b. One hundred is what percent of 25?

$\frac{1500}{20} = \frac{20n}{20}$ 400%

1c. What percent of 5 is 12?

$\frac{12}{5} = \frac{n}{100}$ 240%

1d. What percent of 18 is 9?

50%

2a. What number 11.4% of 330?

$\frac{p}{330} = \frac{11.4}{100}$ (is) 37.62

2b. Find 10.5% of 30.

~~5~~ ~~2.9~~ 3.15

2c. Find 15.3% of 425.

65.03

2d. What number is 63.4% of 12?

7.61

3a. Thirty percent of what number is 63?

$\frac{63}{w} = \frac{30}{100}$ 21 210

3b. 3000 is 60% of what number?

5,000

3c. Forty-five is 3% of what number?

1,500

3d. Eighteen percent of what number is 126?

700

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Lesson 6.3: Using the Percent Equation

Vocabulary	
Term	Definition
Percent Equation	part = whole · percent (↑ in decimal form)

1a. Find 60% of 96.

$p = 96 \cdot 0.60$

57.6

1b. Find 45% of 70.

31.5

2a. 15 is what percent of 125?

$15 = 125n$

12%

2b. 20 is what percent of 400?

5%

3a. 18 is 30% of what number?

$18 = 0.30w$

60

3b. 79 is 80% of what number?

98.75

4. Mr. Potter bought a house for $175,000. Five years later, he sold it for a 24% profit. What was the sale price of the house?

$175,000 \cdot 0.24 = 42,000$

$175,000 + 42,000 =$

$217,000

$24 + 100 = 124\%$

$175,000 \cdot 1.24 =$

$217,000

5. A $45.00 mixer sold for $47.70 with tax. What is the percent of sales tax?

$\frac{45n}{45} = \frac{47.70}{45}$

$n = 1.06$

106%

6%

$47.70 - 45 = 2.70$

$\frac{45n}{45} = \frac{2.70}{45}$

$n = 0.06$

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Lesson 6.4: Percent of Change

Vocabulary		
Term	Definition	Formula
Percent of Change	A ratio that compares the change in two amounts	$\% = \frac{\text{big} - \text{small}}{\text{original}}$
Percent Increase: From original to new it goes up		Percent Decrease: From original to new it goes down

1. Ty had 52 comic books. Now he has 61 books. Find the percent of change. Round to the nearest tenth, if necessary. State whether the percent of change is an *increase* or *decrease*.

2. Find the percent of change from 24 points to 18 points. Then state whether the percent of change is an *increase* or a *decrease*.

Term	Definition	Formula
Percent of Error	a measure of the difference between an estimation and the actual value	$\% = \frac{\text{big} - \text{small}}{\text{amount actual}}$

Find the percent of error. Round to the nearest tenth, if necessary.

3a. Estimated weight: 8 pounds, actual weight: 6.4 pounds

3b. measured length: 2.5 centimeters, actual length: 2.54 centimeters

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Lesson 6.5: Discount and Markup

Vocabulary	
Term	Definition
Markup	The amount add to what the Store paid. Always a percent of increase
Selling Price	How much the customer pays.

Find the selling price if a store pays $42 for a pair of in-line skates and the markup is 25%.

Add markup to the regular price:

$42 \cdot 0.25 = \boxed{10.5}$ ← markup

$42 + 10.5 = 52.50$

$\boxed{\$52.50}$

Add the percent of markup to 100%:

$100\% + 25\% = 125\%$

$42 \cdot 1.25 = 52.5$

$\boxed{\$52.50}$

Also used with...

tax, tip, profits

1. Find the selling price if a store pays $68 for a portable DVD player, and the markup is 35%

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Term	Definition
Discount	the amount a store will mark an item down percent of decrease (Sale, clearance)

A restaurant rolled back prices for a day to their 1964 prices. A pizza that usually sells for $8.50 was marked down 90%. What was the 1964 price of the pizza?

Subtract the discount from the regular price:

$8.50 \cdot 0.9 = 7.65$ (amount of discount)

$8.50 - 7.65 = 0.85$

$0.85 or 85¢

Subtract the percent of discount from 100%:

$100\% - 90\% = 10\%$

$8.50 \cdot 0.1 = 0.85$

$0.85 or 85¢

2. A magazine subscription has a cover price of $35. It is on sale for 67% off the original price. Find the sale price of the magazine subscription.

$35 \cdot 0.67 = 23.45$

$35 - 23.45$

$11.55

3. Luisa got a 75% discount on a sofa. She paid a total of $225. What was the original price?

$100\% - 75\% = 25\%$

$\frac{225}{0.25} = \frac{0.25p}{0.25}$

$900

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4. A CD with an original price of $11.95 is discounted 20%. Sales tax of 5.5% is added to the discounted price how much does it cost to purchase the CD?

① Discounted price:

$11.95 \cdot 0.2 = 2.39$ $11.95 \cdot 0.8 =$

$11.95 + 2.39 =$ 9.56 9.56

② Sales tax: 0.055

$9.56 \cdot 0.055 = 0.5258$

$9.56 + 0.5258 = 10.0858$

$10.09

Lesson 6.6: Simple and Compound Interest

Vocabulary	
Term	Definition
Interest	amount of money paid or earned by a bank or other financial institution.
Simple Interest	paid only on the initial principal
$I = prt$	

Interest	Principal	Rate	Time
I = amount of interest	P = initial amount	r = percent * written in decimal form	t = written in terms of years

1a. $2250 at 6% for 4 years

$I = 2250 \cdot 0.06 \cdot 4$

$540

1b. $4000 at 4.25% for 1 year

$170

2. Suppose Nantai placed $2400 in the bank for 5 years. The annual interest rate is 4.6%. Find the total he has in the bank.

$2,952

$552
+ 2400
2952

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Vocabulary	
Term	Definition
Compound Interest	You find the interest from the previous amo

Compound Interest

$I = p(r+1)^t$

What is the total amount of money in an account where $8(interest rate of 6.25% compounded annually for

① $800 \cdot 0.0625 \cdot 1 = 50$

$800 + 50 = 850$

② $850 \cdot 0.0625 \cdot 1 = 53.125$

$850 + 53.125 = 903.125$

③ $903.125 \cdot 0.0625 = 56.44$

$903.125 + 56.445 = 959.57$

④ $959.57 \cdot 0.0625 \cdot 1 = 59.9$

$59.97 + 59.97 = \$1,019.54$

3. What is the total amount of money in an account where $5000 is invested at an interest rate of 5% compounded annually after 3 years?

① $5000 \cdot 0.05 \cdot 1 = 250$

$5000 + 250 = 5250$

② $5250 \cdot 0.05 \cdot 1 = 262.5$

$5250 + 262.5 = 5512.5$

③ $5512.5 \cdot 0.05 \cdot 1 = 275.625$

$5512.5 + 275.625 = 5788.125$

$\$ 5,788.13$