Algebra 4-2: Models for Subtraction

Warm-Up

Answer the following questions. Use past notes or your book if you need to.

1. Write 4 – 12 as an addition problem. 4 + -12

2. Can we use the Associative Property with subtraction? Support your answer with an example.
No. $(9-7)-6 = 9-(7-6)$
$2-6 = 9-1$
$-4 \neq 8$

3. Change -6 – (-x) into an addition problem. -6 + x

4. Simplify -4x + 6y – 8 (-3x) – 7y. -1y + 20x
$-4x + 6y + 24x - 7y = -1y + 20x$

5. Change from a percent to a decimal. ← 2 places
a. 46% = .46 b. 4.6% = .046 c. .46% = .0046

6. Change from a decimal to a percent. → 2 places
a. .15 = 15% b. .015 = 1.5% c. 1.50 = 150%

Algebra 4-2: Markups & Discounts

Vocabulary	Definition	Example
Discount	* Subtract discount from original price	Sales, coupons, employee discount
Mark-up	* Add mark-up to original price	: tax - 5% shipping handling · tip

Key Words for Subtraction

1. decrease
2. subtract
3. take away
4. less than
5. minus
6. give away
7. under
8. drop
9. withdrawl
10. fewer

2 Methods for Finding Discounted and Marked-up Prices

Method 1

1. Find the amount of money the product is marked-up/discounted.

   Ex) To find 10% off of $50

   $.10(50) = \$5$ (× over the 10)

2. Add/Subtract that amount from the original price.

   Ex) $50 - \$5 = \$45$

Method 2

1. Start with 100 %. Add/Subtract the percent of discount/mark-up.

   Ex) To find 10% off of $50

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

2. Multiply the percentage by the original price.

   Ex) $50(.90) = \$45$

Example Problems

1. Jenny went to the store to buy a prom dress. Originally it costs $140. However, it was on sale for 25%. What is the sale price of the dress?

Method 1

1. $\$140(.25)=\$35$
2. $\$140-35=\boxed{\$105}$

Method 2

1. $100\%-25\%=75\%$
2. $.75(140)=\boxed{\$105}$

2. Taylor bought an iPod. It costs $199 without tax. If tax is 5.5%, how much did Taylor have to pay total for the iPod?

Method 1

1. $.055(199)=10.95$
2. $\$199+10.95$
   $=\boxed{\$209.95}$

Method 2

1. $100\%+5.5\%=105.5\%$
2. $199(1.055)=\$209.95$