Accelerated Math Notes
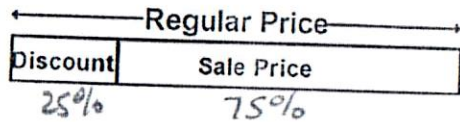## Discount and Markup (Lesson 6-5)

A discount is the amount by which the regular price is reduced. It is always calculated with the regular price as "the whole".

When you subtract the discount from the regular price, you get the sale price.

25% off means you pay 75%

← Regular Price →	
Discount	Sale Price
25%	75%

A store sells items for more than they paid for those items. The amount of increase is called the markup. The percent of markup is a percent of increase. The selling price is the amount the customer pays for the item.

Page 1

A $40 necklace is on sale for 35% off. Find the sale price.

Method 1 Use the percent given in the word problem.

$$\frac{\text{Dollars off}}{\text{Regular Price of Necklace}}$$

$$\frac{35}{100} = \frac{n}{40}$$

$$n = \$14 \text{ off}$$

$$\begin{array}{r} 40 \\ -14 \\ \hline \end{array}$$

$\$26$ sale price

Method 2 Add or Subtract the percent given in the word problem.

If the necklace is discounted 35%, then the sale price is __65__ % of the regular price. $100 - 35$

$$\frac{\text{Sale price}}{\text{Reg.}} \quad \frac{65}{100} = \frac{n}{40}$$

$$n = 26$$

$\$26$

Page 2

A store buys an item for $24. It marks it up 65% before selling it to the customer. What is the selling price of the item?

Method 1 Use the percent given in the word problem.

$$\frac{\text{Amount of Markup}}{\text{Cost for the store}}$$

$$\frac{65}{100} = \frac{n}{24}$$

or

$$65\% \text{ of } 24$$
$$.65(24) = 15.60 \text{ marked up}$$

$$\begin{array}{r} 24 \\ +15.60 \\ \hline \end{array}$$

$\$39.60$ selling price

Method 2 Add or Subtract the percent given in the word problem.

If the markup is 65%, then the selling price is __165__ % of the price of the ~~car~~ item.

$$\frac{\text{selling price}}{\text{cost to store}} \quad \frac{165}{100} = \frac{n}{24}$$

or

$$1.65(24) =$$

$\$39.60$

Page 3

The Easton family bought a car for $22,500. They must pay 6% sales tax. What is the total price of the car including tax?

Method 1 Use the percent given in the word problem.

$$\frac{\text{Amount of Tax}}{\text{Price of Car}}$$

$$\frac{6}{100} = \frac{n}{22500}$$

or

$$.06(22500)$$
$$\$1350 \text{ tax}$$

$$\begin{array}{r} 22500 \\ +1350 \\ \hline \end{array}$$

$\$23,850$

Method 2 Add or Subtract the percent given in the word problem.

If they must pay 6% tax, then the total price (including tax) is __106__ % of the price of the car?

$$\frac{\text{cost including tax}}{\text{cost of car}} \quad \frac{106}{100} = \frac{n}{22500}$$

or

$$1.06(22500)$$

Page 4

Page 5

> Sara pays $58 for an item that includes a 6% sales tax. Find the regular price of the item.

Method 1: Use the percent given	Method 2: Add or subtract the percent given in the word problem.
$\dfrac{tax}{Reg} \quad \dfrac{6}{100} = \dfrac{?}{?}$	The cost including tax is 106% of Reg cost $\dfrac{cost\ w/tax}{Reg} \quad \dfrac{106}{100} = \dfrac{58}{n}$ $n = 54.7169$ $\boxed{\$\ 54.72}$

Page 6

> An item is on sale for 30% off. The sale price of the item is $56. Find the regular price of the item.

Method 1: Use the percent given	Method 2: Add or subtract the percent given in the word problem.
$\dfrac{\%off}{Rg} \quad \dfrac{30}{100} = \dfrac{?}{?}$	$\dfrac{saleprice}{Reg} \quad \dfrac{70}{100} = \dfrac{56}{n}$ $n = 80$ $\boxed{\$80}$

30% off → you pay 70%

Page 7

**Discount is always a part of the regular price. Sales tax is always calculated on the cost of an item after the discount has been taken.

> A bike regularly sells for $340. It is on sale for 40% off the regular price. The sales tax is 6.35%. Find the cost of the item.

① Find sale price
40% off → pay 60%

$\dfrac{saleprice}{Reg} \quad \dfrac{60}{100} = \dfrac{n}{340}$

$n = \$204$ sale price

② Find total with tax

$\dfrac{sale\ price\ +\ tax}{sale\ price} \quad \dfrac{106.35}{100} = \dfrac{n}{204}$

$n = 216.954$

$\boxed{\$216.95}$