

6th Grade: Using percents to solve problems.

Warm-up: Jen likes Hershey kisses. She has a bag of blue and pink Hershey kisses. 35% of the Hershey kisses in the bag are blue.

Jen knows there are 40 pink Hershey kisses in the bag. How many blue Hershey kisses are in the bag? (be careful) (Do in notes

packet)  $\frac{\text{Per}}{100} = \frac{\text{Part}}{\text{Whole}}$

→ 40 pink H.k. (total)  
 ↳ 35% H.k. blue  
 ↳ 65% H.k. pink

? How many blue H.k.

T = Total amount of H. kisses

$$\frac{\text{Pink}}{\text{total}} = \frac{40}{T} = \frac{65}{100}$$

$$\frac{40}{T} = \frac{13}{20}$$

$(\frac{1}{13})$

$$T = 61\frac{2}{13}$$

$$T \approx 62$$

$$\begin{array}{r} \text{Total} \quad 62 \\ - \text{pink} \quad 40 \\ \hline \text{blue} \quad 22 \end{array}$$

There are about 22 blue Hershey Kisses.

What is Discount and Mark-up?

Discount: An amount of money taken off of the original price of an item.

Mark-up: An amount added to the original cost of an item.

Tax or Tip: An amount of money being added to the original cost of an item.

Discount Word Problems: → whole

ex 1: A new DVD player in North Carolina costs \$225 and the sales tax is 5%. What will the customer have to pay for the DVD player?

5% tax  
 \$225 DVD player  
 T = \$tax  
 ? pay total

$$\frac{\text{tax}}{\text{total}} = \frac{T}{225} = \frac{5}{100}$$

(2.25)

$$T = 11.25$$

$$\begin{array}{r} \text{tax } 11.25 \\ + \text{total } 225 \\ \hline \end{array}$$

\$236.25

The DVD player will cost \$236.25

$$\left\{ \begin{array}{l} 5\% \text{ tax} \\ + 100\% \text{ item} \\ \hline 105\% \text{ total} \end{array} \right.$$

P = price total

105% of item = Price  
 $105\% (225) = P$   
 $1.05 (225) = P$   
 $236.25 = P$

$\%(\text{whole}) = \text{Part}$

ex 2: Briana wants to buy a new outfit at the mall. Her outfit originally costs \$68, but it is discounted by 40%. What will Briana pay for her outfit?

\$68 outfit cost [whole]

40% discount

60% pay for

P = discounted price

$$(\%) (\text{outfit}) = \text{Price} \quad \downarrow \text{v.m.}$$

$$60\% (68) = P$$

$$.6(68) = P$$

$$40.8 = P$$

Briana will pay \$40.80 for the outfit.

ex 3: Elena's furniture store marks up their couches 55% so they make a profit. If Elena pays \$650 for a couch, how much will they sell it for?

\$650 couch (wholesale)

Mark-up 55%

Sold for 155%  $\left[ \begin{matrix} 100\% \\ +55\% \end{matrix} \right]$

selling price = \$

% (couch) = Selling Price

$$155\% (650) = \$$$

$$1.55(650) = \$$$

$$1,007.5 = \$$$

The price of the couch will be \$1007.50.

ex 4: Erica goes to Palermos and orders lunch. Her bill came to \$12.50, but she wants to leave a 20% tip. How much will she end up paying for lunch?

20% tip

120% pay

P = price paid

lunch \$12.50

$$\%(\text{Food}) = \text{Price Paid}$$

$$120\%(12.5) = P$$

$$1.2(12.5) = P$$

$$15 = P$$

Erica will pay \$15 for the lunch.

$$\text{Percent of change} = \frac{\text{change} \leftarrow \text{Part}}{\text{original} \leftarrow \text{Whole}} = \frac{\%}{100}$$

A percent of change can be an increase or a decrease. We look at the amount of the change compared to the original amount.

Percent of change includes: Mark-up, discounts, tax, and tips. (Rate  $\rightarrow$  %)

ex 1: Original price is \$1500

Selling price is \$1200

discount  
decreased

change  $\rightarrow$  \$300

$$\frac{\text{change}}{\text{original}} = \frac{300}{1500} = \frac{P}{100}$$

$$P = 20\%$$

20% discount



ex 2: Original <sup>whole</sup> count is 500

↓150

New Count is 350

$$\frac{\text{change}}{\text{original}} = \frac{150}{500} \cdot \frac{100}{1}$$

30 %

decrease of 30%

ex 3: A tennis supply store pays a wholesaler \$90 for a tennis racquet and sells it for \$144. What is the mark-up rate? % change

\$90 wholesaler cost

\$144 selling price

\$54 change mark-up

M = markup %

$$\frac{\text{Mark-up}}{\text{wholesale}} = \frac{54}{90} = \frac{M}{100}$$

$$\frac{6}{10} = \frac{M}{100}$$

$$M = 60\%$$

The mark-up rate is 60%.

ex 4: A photo album that usually sells for \$12.50 was put on sale for \$8.50. What is the percent discount?

\$12.50 original  
~~\$~~8.50 sale price  
 discount % = D  
 discount \$4

$$\frac{\text{discount}}{\text{original}} = \frac{4}{12.5} = \frac{D}{100}$$

(8)      (4)

$$D = 32\%$$

The discount rate is  
 32%

ex 5: A local dog groomer worked in 72 homes last month. If that number declined by 18 homes, what was the percent decrease?

## 6th Grade: Percent Review

### Warm-up:

1. Madison likes to go out and eat with her friends. The total bill was \$74 and she left a 15% tip. How much will Madison pay?
2. David had \$200 in his savings account last month. This month he has \$250. By what percent did his account increase?

\*Come up with two percent review word problems for your partner.

\*Switch and complete

\*Switch back and check.

### 6th Grade : Percent Review

1. Drew likes to go out to eat with his friends. The total bill for their food was \$125.50, but he wants to leave a 20% tip. How much will Drew pay?

2. Laura wants to buy a dress at Macys that cost \$85. The sign on the rack says 55% off. What will Laura pay for the dress?

