Name: KEY Date: _____ Class: _____

Mark UP and Mark DOWN HW

1. Sasha went shopping and decided to purchase a set of bracelets for 25% off of the regular price. If Sasha buys the bracelets today, she will receive an additional 5% Find the sales price of the set of bracelets with both discounts. How much money will Sasha save if she buys the bracelets today?

① 25% off

$\frac{75}{100} = \frac{x}{44}$

$x = \$33$

② Additional 5% off

$\frac{95}{100} = \frac{x}{33}$

$x = \$31.35$

$44 - 31.35 = \$12.65$ will be saved

2. A golf store purchases a set of clubs at a wholesale price of $250. Mr. Edmond learned that the clubs were marked up 200%. Is it possible to have a percent increase greater than 100%? What is the retail price of the clubs? Yes, this is possible.

mark up / original $\frac{300}{100} = \frac{x}{250}$

$x = \$750$ Retail Price In Store

3. Is a percent increase of a set of golf clubs from $250 to $750 the same as a markup rate of 200%? Explain. Yes, this is the same

$\frac{500}{250} = \frac{x}{100}$ $x = 200\%$ because 500 is double the original price. ($2 \times 100\% = 200\%$)

4. You have a coupon for an additional 25% off the price of any sale item at a store. The store has put a robotics kit on sale for 15% off the original price of $40. What is the price of the robotics kit after both discounts?

① 15% off

$\frac{85}{100} = \frac{x}{40}$ $x = \$34$

② Additional 25% off

$\frac{75}{100} = \frac{x}{34}$ $x = 25.5$

$\$25.50$ Final Price

5. A sign says that the price marked on all music equipment is 30% off the original price. You buy an electric guitar for the sale price of $315.

a. What is the original price?

$\frac{315}{x} = \frac{70}{100}$ $x = \$450$

b. How much money did you save off the original price of the guitar?

$450 - 315 = \$135$

c. What percent of the original price is the sale price?

$\frac{\text{is}}{\text{of}} = \frac{\%}{100} \rightarrow \frac{\text{sale}}{\text{original}} = \frac{\%}{100} \rightarrow \frac{315}{450} = \frac{x}{100}$ $x = 70\%$

6. The cost of a New York Yankees baseball cap is $24.00. The local sporting goods store sells it for $30.00. Find the markup rate.

marked up price

$\frac{30}{24} = \frac{x}{100}$ $x = 125\%$

$\$0.25\%$ markup

7. Write an equation to determine the selling price, p, on an item that is originally priced s dollars after a markdown of 15%.

s = original price

p = selling price

$s - 0.15s = p$

OR

$0.85s = p$

8. At the amusement park, Laura paid $6.00 for a small cotton candy. Her older brother works at the park, and he told her they mark up the cotton candy by 300%. Laura does not think that is mathematically possible. Is it possible, and if so, what is the price of the cotton candy before the markup?

marked up price

$\frac{6}{x} = \frac{400}{100}$ marked up price / original price

$x = \$1.50$

9. A store advertises that customers can take 25% off the original price and then take an extra 10% off. Is this 35% off? Explain.

No, because the 25% is taken first off the original price to get a new whole. Then, the extra 10% off is multiplied to the new whole. This is not the same as just adding the discounts together.

10. An item that costs $50 is marked 20% off. Sales tax for the item is 8%. What is the final price, including tax?

a. Solve the problem with the discount applied before the sales tax.

(1) 20% off

$\frac{80}{100} = \frac{x}{50}$ $x = \$40$ sale price

(2) 8% tax ↑

$\frac{108}{100} \times \frac{x}{40}$ $x = \$43.20$

b. Solve the problem with discount applied after the sales tax.

(1) 8% Tax

$\frac{108}{100} = \frac{x}{50}$ $x = \$54$

(2) Discount + 20% off

$\frac{80}{100} \times \frac{x}{54}$ $x = \$43.20$

c. Compare your answers in parts (a) and (b). Explain.

The final prices are both the same. This is because multiplication is commutative.

11. The sale price for a bicycle is $315 dollars. The original price was first discounted by 50% and then discounted an additional 10%. Find the original price of the bicycle.

50% Paid 90% Paid

(1) Working Backwards 315 ÷ 0.9 = $350

(2) 50% off 350 ÷ 0.5 = $700

12. A ski shop has a markup rate of 50%. Find the selling price of skis that cost the storeowner $300.

10% off

$$\frac{150}{100} \quad \frac{x}{300} \qquad x = \$450$$

13. A tennis supply store pays a wholesaler $90 for a tennis racquet and sells it for $144. What is the markup rate?

markup price / wholesale $\quad \frac{144}{90} = \frac{x}{100} \qquad x = 160\%$

markup 60%

14. A shoe store is selling a pair of shoes for $60 that has been discounted by 25%. What was the original selling price?

discount price / original price $\quad \frac{60}{x} = \frac{75}{100} \qquad x = \$80$

15. A shoe store has a markup rate of 75% and is selling a pair of shoes for $133. Find the price the store paid for the shoes.

markup / original $\quad \frac{175}{100} = \frac{133}{x} \qquad x = \$76$

16. If 20% of the 70 faculty members at John F. Kennedy Middle School are male, what is the number of male faculty members?

$$\frac{20}{100} \quad \frac{x}{70} \qquad x = 14 \text{ men}$$