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LESSON #6: TAX, DISCOUNT, GRATUITY AND INTEREST REVIEW  
(YES, THIS MEANS YOU HAVE A TEST TOMORROW!)

FORMULAS YOU NEED TO KNOW:

$$\text{Percent Change} = \frac{|\text{New Value} - \text{Old Value}|}{\text{Old Value}} \times 100$$

**Simple Interest Formula**

$$\mathbf{I = P \times R \times T}$$

Where:

- I** = the Interest Money created in dollars  
**P** = the "Principal" starting amount of money  
**R** = the Interest Rate per year (in decimal form)  
**T** = the Time the money is Invested,  
or Borrowed, in Years

- 1) Brian works in a clothing store. He receives a 15% discount rate on anything he buys from the store.
- a) What will Brian's **new price** be for a \$20 shirt?
- b) What is the **amount of tax** that he will pay if the sales tax rate is 8.5%?

$$\begin{array}{r} 20 \times .15 = 3 \\ - 3 \\ \hline \boxed{\$17} \end{array}$$

$$\begin{array}{r} 17 \times .085 = .595 \\ = \boxed{\$.60} \end{array}$$

- 2) A stamp that sold for <sup>old</sup>\$240 in 1994 is now worth only <sup>new</sup>\$180 to collectors. What was the **percent of decrease** of the stamp?
- 3) A stamp sold for \$75 in 1992. The stamp **increased 20%** in value in 1996. What was the **value** of the stamp in 1996?

$$\frac{240 - 180}{240} \times 100$$

$$.25 \times 100$$

$$\boxed{25\%}$$

$$\begin{array}{r} 75 \times .20 = 15 \\ + 15 \\ \hline \boxed{\$90} \end{array}$$

- 4) A sweater originally selling for \$39.00 was <sup>old</sup> **marked down** to \$29.40. <sup>new</sup> What was the rate of discount? Round your answer to the nearest whole percent.

$$\frac{39 - 29.40}{39} \times 100$$

$$.2461 \times 100$$

$$24.61 \approx \boxed{25\%}$$

- 5) Amanda deposited \$1100 in a bank. The bank pays a 3.5% interest rate for 6 months. What is Amanda's **interest** after the 6 months? Write the formula.

$$I = P \times R \times T$$

$$I = 1100 \times .035 \times .5$$

$$\boxed{I = 19.25}$$

- 6) A t-shirt is selling for \$30. Because the holiday season is approaching, the shirt was **reduced** by 20%, and then **decreased** another 20%. How much is the **current** cost of the shirt now? Show all steps.

$$30 \times .20 = 6$$

$$\begin{array}{r} 30 \\ - 6 \\ \hline \end{array}$$

$$\boxed{\$19.20}$$

$$24 \times .20 = 4.8$$

$$\begin{array}{r} 24 \\ - 4.8 \\ \hline \end{array}$$

- 7) The original price of a T.V. is \$400. P.C. Richard is selling the TV for \$160. <sup>old</sup> <sup>new</sup>

- a) What is the **amount** of discount offered on the T.V.?

$$400 - 160 = \boxed{\$240 \text{ discount}}$$

- b) What is the **rate** of discount on the T.V.?

$$\frac{240}{400} \times 100$$

$$.6 \times 100 = \boxed{60\%}$$

- 8) Joe makes a salary of \$1,000 a week plus a 5% commission on all of his sales. Last week, his total sales were \$850.

- a) How much does Joe make in commission?

$$850 \times .05 = \boxed{\$42.50}$$

- b) How much money does Joe earn for the week?

$$1000 + 42.50 =$$

$$\boxed{1042.50}$$

- 10) Mrs. Rich went on a shopping spree at Macy's. She purchased 3 scarves at \$15.82 per scarf, 2 sweaters at \$45.00 per sweater, and one jacket for \$85. At the register, Mrs. Rich received a 15% discount of her total purchases. The sales tax rate is 8.5%. The following is an incomplete sales receipt. Complete the sales receipt and be sure to show all work.

Show work here.

MACY'S	
3 Scarves	<u>47.46</u>
2 Sweaters	<u>90</u>
1 Jacket	<u>+ 85</u>
<b>Subtotal</b>	<u>222.46</u>
<b>Disc. (15%)</b>	<u>- 33.37</u>
<b>Sale Price</b>	<u>189.09</u>
<b>Tax (8.5%)</b>	<u>+ 16.07</u>
<b>Final Cost</b>	<u>205.16</u>

$$15.82 \times 3 = 47.46$$

$$45 \times 2 = 90$$

$$85 \times 1 = 85$$

$$222.46 \times .15 = 33.37$$

$$189.09 \times .085 = 16.07$$

- 11) A group of 8 friends went out to dinner to Outback Steakhouse. At the end of dinner, they ask for their bill. The bill comes to a total of \$345.27. The friends decide to leave the waiter an 18% tip.

a) How much do the friends end up spending on dinner **altogether**?

$$345.27 \times .18 = 62.15$$

$$+ 62.15$$

$$\boxed{\$407.42}$$

b) If the friends decide to divide up the bill evenly, how much does **each** person end up spending?

$$407.42 \div 8 =$$

$$\boxed{\$50.93 \text{ pp}}$$

- 12) The number of public libraries in 1980 was approximately 8700. In 1990, there were approximately 9000. What was the **percent of increase**, to the nearest percent?

$$\frac{|8700 - 9000|}{8700} \times 100 = 3.4\% \approx 3\%$$

$$\approx \boxed{3\% \text{ increase}}$$

