

Name: _____

Date: _____

Aim: How can we use percent to find tax, tip and commission?

Do Now:

1.) Lunch cost \$34, but you had a coupon for the restaurant for 15% off. What was the cost of your lunch after the discount?

$$\text{disc} = \% \cdot \text{orig. price.}$$

$$n = (0.15)(34) \rightarrow \begin{array}{r} 34.00 \\ - 5.10 \\ \hline \boxed{\$28.90} \end{array}$$

$$n = \$5.10$$

2.) Sam bought a shirt for \$60. If he had a coupon for 20% off, what is the new price of the shirt?

$$\text{disc} = \% \cdot \text{orig. price}$$

$$n = (0.2)(60) \rightarrow \begin{array}{r} 60 \\ - 12 \\ \hline \boxed{\$48} \end{array}$$

$$n = 12$$

3.) If the regular price of an item is \$54 and the store has it marked down to \$30, find the markdown rate to the nearest percent?

$$\text{disc} = \% \cdot \text{orig. price}$$

$$\frac{24}{54} = \frac{n\% \cdot 54}{54} \rightarrow \boxed{44\%}$$

$$0.444... = n\%$$

4.) A \$2,000 computer is on sale at 20% off.

a.) What is the amount of discount in dollars?

$$\text{disc} = \% \cdot \text{price}$$

$$n = (0.2)(2000)$$

$$n = \boxed{\$400}$$

b.) What is the sales price?

$$2000 - 400$$

$$\boxed{\$1600}$$

c.) If the sales tax is now 7.5%, find the dollar amount of tax that will be applied to the sales price.

$$\text{tax} = \% \cdot \text{sale price}$$

$$n = (0.075)(1600)$$

$$n = \boxed{\$120}$$

$$\begin{array}{r} 1600 \\ - 120 \\ \hline \boxed{\$1480} \end{array}$$

d.) What is the final cost of the computer?

Tax: a % of the price of merchandise (added to price)

Gratuity/Tip: a % of the pretax price for goods & service (usually 15% - 20%)

Markup: the amount added to the cost of an item by a seller

Commission: a % paid to a salesperson for services

$$\text{tip} = \% \cdot \text{price}$$

$$\text{markup} = \% \cdot \text{price}$$

$$\text{Commission} = \% \cdot \text{sales}$$

PRACTICE:

1. The car salesman earns 12% commission. If he sells cars totaling \$7,800, how much does the car salesman earn?

$$\text{Comm} = \% \cdot \text{sales}$$

$$n = (0.12)(7800)$$

$$n = \$936$$

2. The shoe salesperson at Nordstroms work on commission. If she sells shoes that total \$850 and earns \$76.50 in commission, what % of the sales did she earn?

$$\text{comm} = \% \cdot \text{sales}$$

$$\frac{76.50}{850} = \frac{n\% \cdot 850}{850}$$

$$0.09 = n\%$$

$$9\%$$

3. The sticker price of a used car is \$15,800. If the sales tax is 8%, what is the total cost?

$$\text{tax} = \% \cdot \text{price}$$

$$n = (0.08)(15800)$$

$$n = \$1264$$

$$\begin{array}{r} 15800 \\ + 1264 \\ \hline \end{array}$$

$$\$17064$$

4. A bill for a meal is \$21.75. Find the total cost if the customer leaves a 15% tip.

$$\text{tip} = \% \cdot \text{price}$$

$$n = (0.15)(21.75)$$

$$n = \$3.26$$

$$\begin{array}{r} 21.75 \\ + 3.26 \\ \hline \end{array}$$

$$\$25.01$$

5. If you go out to eat and your family dinner totals \$68.20, and you decide to leave a tip of \$13.50, would that be reasonable (assuming 15-20% is reasonable)? Show math to support your answer.

YES →

$$\text{tip} = \% \cdot \text{price}$$

$$\frac{13.50}{68.20} = \frac{n\% \cdot 68.20}{68.20}$$

$$0.1979... = n\%$$

$$20\%$$

6. When you purchased a sweater for \$35.00, you paid \$3.06 in sales tax. What was the % of tax rate that you paid?

$$\text{tax} = \% \cdot \text{price}$$

$$\frac{3.06}{35} = \frac{n\% \cdot 35}{35}$$

$$0.0874... = n\%$$

$$9\%$$

7. You and your friends went out to dinner. The bill, **before** sales tax and tip, was \$85.50. A sales tax of 8% was added. You and your friends then tipped 20% on the amount **after** the sales tax was added. What was the amount, in dollars, of the sales tax? What was the total amount paid, including tax and tip?

$$\text{tax} = \% \cdot \text{price}$$

$$n = (0.08)(85.50)$$

$$n = 6.84$$

$$\text{tip} = \% \cdot \text{price}$$

$$n = (0.20)(92.34)$$

$$n = \$18.47$$

$$85.50 + 6.84 = \$92.34$$

$$92.34 + 18.47$$

$$\$110.81$$