

Section 10-2:
Sales, Discounts,
Tips & Taxes

Objectives:

- **Calculate the sales tax, tax rate, or the total cost of a given item.**
- **Calculate the tip, percent of tip, or the total bill.**
- **Calculate amount of discount, percent of discount, or sale price.**

Sales Tax:

$$\frac{\text{Amount of Tax}}{\text{Original Price}} = \frac{\%}{100}$$

Tip Amount:

$$\frac{\text{Amount of Tip}}{\text{Original Price}} = \frac{\%}{100}$$

Discount:

$$\frac{\text{Amount of Discount}}{\text{Original Price}} = \frac{\%}{100}$$

Ex 1:

\$8.00 chocolate, tax rate 7.5%

What is the total cost?

$$\frac{x}{\$8.00} \leftarrow \begin{matrix} \nearrow 7.5\% \\ \searrow 100\% \end{matrix}$$

Total Cost
 $\$8.00 + \0.60

$\$8.60$

Amt. of Tax

$$\frac{100x}{100} = \frac{60}{100}$$
$$x = \$0.60$$

Ex 2:

Outback bill \$30, tip 18%

How much is the total bill?

$$\frac{x}{30} \times \frac{18}{100}$$

$$\frac{100x}{100} = \frac{540}{100}$$

Amt. of
Tip

$$x = \$5.40$$

Total Bill

$$30 + 5.40$$

$$\text{\$}35.40$$

Ex 3:

\$34.95 jeans, 10% off coupon

Find the total cost.

$$\frac{x}{34.95} \times \frac{10}{100}$$

Total Cost
 $34.95 - 3.50$

$$\frac{100x}{\text{Amt. of } 100} = \frac{349.5}{100}$$

Discount $x = 3.495 \approx \$3.50$

$$\text{\$}31.45$$

Ex 4:

Find the % of discount for a video game:

reg price \$50

sale price \$35

Amt. of
Discount is
 $50 - 35 = 15$

$$\frac{15}{50} = \frac{x}{100}$$

$$\frac{1500}{50} = \frac{50x}{50}$$

$$x = 30\%$$