

6-3D: Discount

12-1-15

**Discount:** the amount by which the regular price is reduced (% off) aka "on sale"

**Sale Price:** the amount a customer pays for an item (original price minus discount)

**Original Price:** the amount an item costs before mark-up or discount

$$\text{Sale price} \overset{\text{is}}{=} \frac{\text{original price}}{100} \times \% \text{ discount}$$

**Ex. 1:** Find the sale price to the nearest cent. (hundredths place)

A) \$20 golf balls, 30% off

Discount:

$$\frac{x}{20} = \frac{30}{100}$$

$$100x = 600$$

$$\frac{100x}{100} = \frac{600}{100}$$

$$x = 6$$

Total: \$20

$$\begin{array}{r} 20 \\ - 6 \\ \hline 14 \end{array}$$

Customer pays:

$$100\% - 30\% = 70\%$$

$$\frac{x}{20} = \frac{70}{100}$$

$$100x = 1400$$

$$\frac{100x}{100} = \frac{1400}{100}$$

$$x = 14$$

B) \$39 party balloons, 25% discount,

5.75% tax

\* calculate tax after discount

$$\frac{x}{39} = \frac{75}{100}$$

$$100x = 2925$$

$$\frac{100x}{100} = \frac{2925}{100}$$

$$x = 29.25$$

Customer pays:

$$100\% (\text{Sales}) + 5.75\% = 105.75\%$$

$$\frac{x}{29.25} = \frac{105.75}{100}$$

$$100x = 3093.1875$$

$$\frac{100x}{100} = \frac{3093.1875}{100}$$

$$x = 30.93$$

**Ex. 2:** Find the original price to the nearest cent.

A) Backpack: discount 60%, sale price \$14.24

Customer pays:

$$100\% - 60\% = 40\%$$

$$\frac{14.24}{x} = \frac{40}{100}$$

$$1424 = 40x$$

$$\frac{1424}{40} = \frac{40x}{40}$$

$$x = 35.60$$

B) Rosa buys a cell phone that is on sale for \$79.98. If the price represents a 60% discount, what is the original price?

Customer pays:

$$100\% - 60\% = 40\%$$

$$\frac{79.98}{x} = \frac{40}{100}$$

$$7998 = 40x$$

$$\frac{7998}{40} = \frac{40x}{40}$$

$$x = 199.95$$

HW: GM7 pg. 357(1-18all)