

6.6 Discounts and Markups (continued)

I: Finding the Original Price

A) Finding the Original Price before a Discount

1. A pair of shoes now costs \$33 after a 40% discount. What is the original price?

100% - 40% = 60% paid for
* 60% of whole = \$33

$$\frac{0.6x = 33}{0.6 \quad 0.6} \quad \boxed{x = \$55}$$

2. What was the original cost of an item that was 80% off and now sells for \$90?

100% - 80% = 20%
* 20% of whole = 90

$$0.2x = 90 \quad \boxed{x = \$450}$$

3. Original Price: ?
Percent of discount: 25%
Sale Price: \$40

100% - 25% = 75%

$$75\% \text{ of } W = \$40 \\ \frac{.75W = 40}{.75 \quad .75}$$

$$\boxed{\$53.33}$$

4. Original Price: ?
Percent of discount: 15%
Sale Price: \$146.54

100% - 15% = 85%
% of whole = part
85% of x = \$146.54

$$\frac{0.85x = 146.54}{0.85 \quad 0.85}$$

$$\boxed{x = \$172.40}$$

II: Finding the Percent of Discount or Markup Percent of change (6.5)

Any time you are finding the percent of change from one number to another, you subtract the two numbers and that is your numerator. The denominator is the original amount. Divide and turn the decimal into a percent (multiply by 100); then round to the nearest **tenth of a percent** (unless it ends in the hundredths place)

- ✓ If it was a discount, it is a decrease
- ✓ If it was a markup, it is an increase

1. Original price is \$82; sale price is \$65.60;
What is the percent of the discount?

$$82 - 65.60 = 16.4$$

$$\frac{16.4}{82} = 20\% \text{ decrease}$$

2. Original cost to store is \$25; selling price is \$37.50;
What is the percent of the markup?

$$37.50 - 25 = 12.5$$

$$\frac{12.5}{25} = 50\% \text{ increase}$$

A store pays \$70 for a skateboard.
The percent of markup is 35%.

a) What is the selling price? 100% + 35% = 135%

$$70(1.35) = \$94.50$$

b) What do you pay if it goes on sale for 15% off?

$$(94.50)(0.85) = \$80.33$$

c) If you buy it on sale, what is your total with 7.25% tax?

$$(80.33)(1.0725) = \$86.15$$
100% + 7.25% = 107.25% = 1.0725