Business Math

LEARNING OBJECTIVES

1. Calculate markup, gross profit, net profit, and discount.
2. Explain the concepts of average wholesale price and insurance reimbursement.
3. Calculate inventory turnover.
4. Find the annual depreciation of a long-term asset given the initial value, the disposal value, and the estimated life of the asset.

OUTLINE

Introduction

A pharmacy is like any other business; it must take in more money than it pays out in order to stay in business. Money paid out is the expense of running the business and can include overhead (rent, utilities), salaries, and cost to purchase and package drugs. Money taken in is known as **receipts**, or **revenue**. In hospitals or other institutional pharmacy settings, this comes from the selling price for filled drug orders, most often in the form of reimbursements from insurance companies. In retail pharmacies, prescription sales, and the merchandise from the front of the store, including over-the-counter medications and health and beauty products, are the sources of revenue. The difference between receipts and expenses is called profit. Receipts must be greater than expenses for the pharmacy to make a profit. Often times the difference between a successful business and one that fails is a matter of keeping costs down by avoiding waste and making cost-effective purchasing decisions.

Receipts—The amount of money received.

Revenue—The total of all money received from the sale of a firm's product or service during a given period.

TECH NOTE!

Profit is dependent upon keeping costs lower than revenue.

Markup, Gross Profit, and Net Profit

In order to maintain a profit, pharmacies buy products at one price and sell them at a higher price. The mark-up or **gross profit** is the difference between the selling price and the purchase price. Markup rate is the ratio of markup to purchase price expressed as a percent.

Gross Profit—A business' revenue minus its cost of goods sold.

EXAMPLE

Joe's Pharmacy buys 20-mg Ritalin® tablets for $64.00 for a bottle of 30 tablets. Joe fills a prescription for Miss Anita Focus for 30 tablets and charges her $75.00. What is the markup on this prescription?

SOLUTION

Purchase price = \$64.00
Selling price = \$75.00
Markup = purchase price – selling price
Markup = \$75.00 – \$64.00 = \$11.00

EXAMPLE

Joe's Pharmacy buys a 6-ounce bottle of Caladryl® Lotion for \$3.50. Joe sells the bottle to Boyd Seechan for \$7.00. What is the markup rate on the Caladryl®?

SOLUTION

Purchase price = \$3.50
Selling price = \$7.00
Markup = selling price – purchase price
Markup = \$7.00 – \$3.50 = \$3.50
Markup rate = (markup/purchase price) × 100%

$$\text{Markup rate} = \frac{3.50}{3.50} \times 100\% = 100\%$$

EXAMPLE

Joe's Pharmacy buys a bottle of 30 Ambien® CR 12.5-mg tablets for \$190.00.

Ms. Ivana Dozoff has a prescription for 30 Ambien® CR tablets. Joe's markup rate on this drug is 45%. Find the markup. Find the price Ms. Dozoff is charged.

SOLUTION

Markup = markup rate × purchase price
Markup = 0.45 × 190.00
Markup = \$85.50
Selling price = purchase price + markup
Selling price = \$190.00 + \$85.50 = \$275.50

Discount

Pharmacies and suppliers may offer a product at a price lower than the regular price. The difference between the regular price and the lower price is called the **discount**.

Discount— A reduction from the full or standard amount of a price.

EXAMPLE

The regular price of amoxapine 50 mg is \$63.00 for 90 tablets. One supplier sells them at a discounted price of \$50.00 for 90 tablets. What is the amount of the discount?