

EST 8

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**Esthetician – All Trades  
Business Management Part - 5  
Retail Calculations**



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# Business Management Part - 5

## Retail Calculations

### Rationale

*Why is it important to learn this skill?*

Operating a business is dependent on many factors. A business has many forms of money entering, money leaving, and money sitting on the shelf as inventory. Retail calculations are needed to maximize profitability. This is done by analyzing past trends, understanding what is presently happening, and predicting what will happen.

### Outcome

*When you have completed this module, you will be able to:*

Perform retail calculations for products, sales, and inventory.

### Objectives

1. Perform retail calculations for goods.
2. Perform retail calculations for inventory.
3. Perform retail calculations for inventory and sales.
4. Perform retail calculations for commission.

### Introduction

Although intuition has its place, feelings can be wrong. A person may feel that a product is selling well based on observations. This inaccurate assessment may lead to over-purchasing units, and the business ends up with too much money tied up in stock. An ongoing, systematic calculation will lead to an accurate portrayal of sales rates, and as a result, the perfect amount of stock can be purchased. Having the right amount of stock in place will keep units on the shelf and free up cash to make other investments. Business calculations are necessary to run an efficient business and paint an accurate picture of its operations.

# Objective One

*When you have completed this objective, you will be able to:*

Perform retail calculations for goods.

## Cost of Goods

The cost of good (COGS) calculation is used to determine how much a unit cost to purchase from the supplier. It is calculated with the formula:

$$\text{cost of goods} = \text{retail price} - \text{mark up}$$

**Example:** A facial steamer is sold to clients for \$116, and the mark up is \$44. How much did it cost to purchase the steamer from the supplier?

Step one: write out the formula       $COGS = \text{retail price} - \text{markup}$

Step two: fill in the variables       $COGS = 116 - 44$

Step three: simplify       $COGS = \$72.00$

## Retail Price

The retail price (RP) is the price paid for goods and services by the customer. The retail price must be set low enough to be competitive, but high enough to earn profits.

Consider the formula       $\text{retail price} = \text{cost of goods} + \text{markup}$

Cost of the goods as paid by the salon.

Amount added to the goods by the salon, in order to generate profits and cover operating costs.

**Example:** a home care kit cost a salon \$38.00 from the supplier. What is the retail price if the salon adds \$15.00 to the price?

Step one: write out the formula      $RP = COGS + markup$

Step two: fill in the variables      $RP = 38 + 15$

Step three: simplify      $RP = \$53.00$

## Net Sales

Gross Sales is the total amount of the product and/or services sold. In comparison, net sales is the amount of sales after certain deductions. To calculate net sales, several numbers need to be identified:

- Total sales.
- How much was returned.
- The amount of damaged products and missing inventory.

Once these variables are known, net sales can be calculated with the following formula.

$$net\ sales = gross\ sales - returns\ and\ allowances$$

**Example:** A salon sells \$40,000 in products. It had \$3,500 in returns, \$1,000 in damaged goods and \$600 in missing inventory.

Step one: write out the formula

$$net\ sales = gross\ sales - returns\ and\ allowances$$

Step two: fill in the numbers

$$net\ sales = 40,000 - (3,500 + 1,000 + 600)$$

Step three: simplify                       $net\ sales = 40,000 - (5,100)$

Step four: simplify                       $net\ sales = \$34,900$

## Mark up

What is 'mark up?' For example, a bottle of polish is purchased from the wholesaler for \$10. The same bottle is sold to a customer in a salon for \$14. Marking up products results in profits. Here is how to calculate the profit created by mark up.

$$mark\ up = \frac{retail\ price - cost\ of\ goods}{retail\ price} \times 100\%$$

$$mark\ up = \frac{14 - 10}{14} \times 100\%$$

$$mark\ up = 0.286 \times 100$$

$$mark\ up = 28.6\%$$

The bottle of polish was marked up 28.6%. A 50% to 100% markup is common. For example, if a bottle of polish is purchased from the wholesaler for \$5, it is sold to a client in a salon for \$10. The profits from markup cover costs such as staff wages, electricity bills, shipping, customs, and duty. Wholesalers can often recommend the retail price of a product.

# Objective One Self-Test

1) If the cost of a product was \$44.00 from the supplier, and the mark up is \$8.50, what is the retail price?

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2) If a product was sold to a client for \$82.75 and the mark up was \$12.95, what was the cost of the product from the supplier?

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3) If an item was purchased from the supplier for \$14.60 and the mark up was \$6.20, what was the retail price?

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4) In one month a store had gross sales of \$14,700. In the same time period, the store had \$960 in returns and \$270 in damaged and missing goods. What were the net sales for the month?

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5) If a product has a retail price of \$72.00 and a cog of \$51.00, what is the mark up?

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6) If a product has a retail cost of \$42.00, and a cog of \$28.00, what is the mark up?

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# Objective One Self-Test Answers

1) Step one: write out the formula

$$\text{cost of goods} = \text{retail price} - \text{mark up}$$

Step two: enter the numbers

$$44 = \text{retail price} - 8.5$$

Step three: simplify by moving the -8.5 to the other side of the equation. When it crosses the equals sign, it changes from a negative to a positive

$$44 + 8.5 = \text{retail price}$$

Step four: simplify

$$\boxed{\$52.50} = \text{retail price}$$

2) Step one: write out the formula

$$\text{cost of goods} = \text{retail price} - \text{mark up}$$

Step two: enter the numbers

$$\text{cost of goods} = 82.75 - 12.95$$

Step three: simplify

$$\text{cost of goods} = \boxed{\$95.70}$$

3) Step one: write out the formula

$$\text{retail price} = \text{cost of goods} + \text{markup}$$

Step two: enter the numbers

$$\text{retail price} = 14.60 + 6.20$$

Step three: simplify

$$\text{retail price} = \boxed{\$20.80}$$

4) Step one: write out the formula

$$\text{net sales} = \text{gross sales} - \text{returns and allowances}$$

Step two: enter the numbers

$$\text{net sales} = 14,700 - (960 + 270)$$

Step three: simplify

$$\text{net sales} = 14,700 - 1,230$$

Step four: simplify

$$\text{net sales} = \boxed{\$13,470}$$

5) Step one: write out the formula

$$\text{mark up} = \frac{\text{retail price} - \text{cost of goods}}{\text{retail price}} \times 100\%$$

Step two: enter the numbers

$$\text{mark up} = \frac{72 - 51}{72} \times 100\%$$

Step three: eliminate the fraction

$$\text{mark up} = \frac{21}{72} \times 100\%$$

Step four: simplify

$$\text{mark up} = 0.292 \times 100\%$$

Step five:

$$\text{mark up} = \boxed{29.2\%}$$

6) Step one: write out the formula

$$\text{mark up} = \frac{\text{retail price} - \text{cost of goods}}{\text{retail price}} \times 100\%$$

Step two: enter the numbers

$$\text{mark up} = \frac{42 - 28}{42} \times 100\%$$

Step three: simplify

$$\text{mark up} = \frac{14}{42} \times 100\%$$

Step four:

$$\text{mark up} = 0.333 \times 100$$

Step five:

$$\text{mark up} = \boxed{33.3\%}$$

# Objective Two

*When you have completed this objective, you will be able to:*  
Perform retail calculations for inventory.

## Average Inventory

For a period of one month, average inventory (AI) is calculated by adding the cost of inventory at the beginning of the month to the cost of the inventory at the end of the month. The sum is divided by 2.

Consider the equation:  $AI = \frac{\text{beginning cost} + \text{end cost}}{2}$

**Example:** On the first day of February, inventory amounted to \$7,407. On the last day of February, the inventory amounted to \$7,233. What is the average inventory?

Step one: write out the formula  $AI = \frac{\text{beginning cost} + \text{end cost}}{2}$

Step two: fill in the variables  $AI = \frac{7,407 + 7,233}{2}$

Step three: simplify  $AI = \frac{14,640}{2}$

Step four: simplify  $AI = \frac{14,640}{2}$

$$AI = \$7,320$$

## Sell Through Percent

Sell through percent is a useful measure that provides a comparison of sales and inventory. Sell through can be evaluated on a daily basis for fast moving products or weekly for slower moving products. A higher value indicates that sales speed is high. A high sales speed should be matched by adequate inventory. A low sell through can indicate poor sales or too much inventory. Consider the following formula

$$\text{sell through \%} = \frac{\text{units sold}}{\text{units on hand} + \text{units sold}}$$

**Example:** A salon has 80 sets of tweezers in inventory and 20 sets of the shelf in the waiting area. This month, they have sold 40 sets. What is the sell through percentage?

Step one: write out the formula

$$\text{sell through \%} = \frac{\text{units sold}}{\text{units on hand} + \text{units sold}}$$

Step two: fill in the numbers

$$\text{sell through \%} = \frac{40}{100+40}$$

Step three: simplify

$$\text{sell through \%} = \frac{40}{140}$$

Step four: simplify

$$\text{sell through \%} = 28.6\%$$

# Objective Two Self-Test

1) At the beginning of January a salon had an inventory of \$12,690. At the end of the month, the inventory was \$8,043. What was the average inventory for the month?

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2) At the beginning of April a salon had an inventory of \$5,429. At the end of the month, the inventory was \$7,883. What was the average inventory for the month?

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3) A salon has sold 271 units and has 384 units on hand. What is the sell through percent?

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4) A salon has sold 817 units and has 185 units on hand. What is the sell through percent?

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# Objective Two Self-Test Answers

1) Step one: write out the formula  $AI = \frac{\textit{beginning cost} + \textit{end cost}}{2}$

Step two: enter the numbers  $AI = \frac{12,690 + 8,043}{2}$

Step three: simplify  $AI = \frac{21,003}{2}$

Step four: simplify  $AI = \boxed{\$10,501.50}$

2) Step one: write out the formula  $AI = \frac{\textit{beginning cost} + \textit{end cost}}{2}$

Step two: enter the numbers  $AI = \frac{5,429 + 7,883}{2}$

Step three: simplify  $AI = \frac{13,312}{2}$

Step four: simplify  $AI = \boxed{\$6,656}$

3) Step one: write out the formula

$$\textit{sell through \%} = \frac{\textit{units sold}}{\textit{units on hand} + \textit{units sold}} \times 100\%$$

Step two: enter the numbers

$$\textit{sell through \%} = \frac{271}{384 + 271} \times 100\%$$

Step three: simplify

$$\textit{sell through \%} = \frac{271}{655} \times 100\%$$

Step four: simplify

$$\textit{sell through \%} = 0.4137 \times 100\%$$

Step five: simplify

$$\textit{sell through \%} = \boxed{41.37\%}$$

4) Step one: write out the formula

$$\textit{sell through \%} = \frac{\textit{units sold}}{\textit{units on hand} + \textit{units sold}} \times 100\%$$

Step two: enter the numbers

$$\textit{sell through \%} = \frac{817}{185 + 817} \times 100\%$$

Step three: simplify

$$\textit{sell through \%} = \frac{817}{1,002} \times 100\%$$

Step four: simplify

$$\textit{sell through \%} = 0.8154 \times 100\%$$

Step five: simplify

$$\textit{sell through \%} = \boxed{81.54\%}$$

# Objective Three

*When you have completed this objective, you will be able to:*

Perform retail calculations for inventory and sales.

## Inventory Turnover

Inventory turnover (ITO) is the ratio of the cost of goods sold to the average inventory for the period. Consider the formula:

$$\text{inventory turnover} = \frac{\text{cost of goods sold}}{\text{average inventory for period}}$$

**Cost of goods sold:** the expense incurred in order to manufacture, create, or sell a product, including the purchase price of raw material and the expenses of turning it into a product.

**Example:** for a one year period, the cost of goods sold by a salon is \$58,000. The average inventory value for the same time period was \$9,200. Calculate the inventory turnover.

Step one: write out the formula  $\text{inventory turnover} = \frac{\text{cost of goods sold}}{\text{average inventory for period}}$

Step two: fill in the variables  $ITO = \frac{58,000}{9,200}$

Step three: simplify  $ITO = 6.3$

What does this mean? The salon sells all of its inventory 6.3 times per year. If one salon sells its inventory 6.3 times per year while another salon sells its inventory 8 times per year, the second salon has a chance of making more profits.

It is also important to know the percentage of current assets located in inventory. If 70% of a company's current assets are located in inventory, it is best that the business have a high turnover ratio.

## Stock to Sales Ratio

The stock to sales ratio (ssr) is a statistic for measuring whether or not a business is overstocked. The stock to sales ratio is the ratio of the inventory available for sale versus the quantity actually sold. For every unit sold, how many units were on hand? For every single sale made of a particular item, how many items were in stock at that time? Consider the formula

$$\text{stock to sales ratio} = \frac{\text{beginning of month stock}}{\text{total month sales}}$$

**Example:** at the beginning of the month, a salon had 60 bottles of toner in inventory. A total of 17 bottles were sold over the course of the month. What is the stock to sales ratio?

Step one: write out the formula

$$\text{stock to sales ratio} = \frac{\text{beginning of month stock}}{\text{total month sales}}$$

Step two: fill in the numbers

$$SSR = \frac{60}{17}$$

Step three: simplify

$$SSR = \boxed{3.53}$$

What does this mean? For every bottle of toner that was sold, the salon had 3.53 bottles on hand. Over the course of time, each business will determine the best ratio for each product. It is important to have enough stock on hand to meet sales, but not an excessive amount sitting in inventory.

The ratio can rise if stock is prematurely ordered, or if an item stops selling. Either case reduces profitability. If this happens, wait before purchasing more items and work to sell more. If numbers are not monitored, the opposite situation can happen. A salon can have too few items in inventory. If the salon runs out of items, customers might feel that the salon is unreliable, and they may go elsewhere to purchase them.

## Acid Test Ratio

The acid test ratio (aATR) is a measurement of how well a business can meet its short-term financial obligations without selling any inventory. What if a store was flooded and was forced to close for repairs for a few days? The purpose of this calculation is to show how easily a company could be liquidated, and therefore help financial institutions decide how credit worthy the company is. The easier a business is to liquidate, the less risk the bank accepts when offering a loan.

**Current assets:** sometimes called "liquid assets" are things that can be quickly converted into cash, usually within 1 year or less. Examples include: cash, short-term investments, and some items.

**Inventory:** the value of held materials and goods. Examples include: raw materials, assemblies, work in process, finished goods; repair, maintenance, , spare, and consumable materials; and goods for sale.

Consider the equation:

$$ATR = \frac{\text{current assets} - \text{inventory}}{\text{current liabilities}}$$

**Current liabilities:** the debts a company owes which must be paid within one year. Examples include short term loans, accounts payable, bonds payable, consumer deposits, and reserves for Federal and Provincial taxes.

**Example:** a salon has \$10,000 cash in the bank and \$7,000 in other assets. The salon also has \$9,000 in liabilities and \$3,000 in inventory. What is the acid test ratio?

Step one: write out the formula  $ATR = \frac{\text{current assets} - \text{inventory}}{\text{current liabilities}}$

Step two: fill in the variables  $ATR = \frac{17,000 - 3,000}{9,000}$

Step three: simplify  $ATR = \frac{14,000}{9,000}$

Step four: simplify  $ATR = \frac{14,000}{9,000}$

$ATR = 1.56$  or 1.56 : 1

A ratio greater than 1:1 indicates that the business can pay its current liabilities without needing to sell inventory.

## Open to Buy

Open to buy is a way to compare current inventory with the business's sales plan. From this comparison it can be determined how much inventory a business can safely purchase. It is important to match the purchase of inventory to the rate at which it will sell. Inventory is often the largest expense for a business, and the amount of products that a business possesses in inventory must be managed. If a salon purchases \$4,000 worth of inventory, the inventory must be paid for, often before it is actually sold. Because the salon must use its cash to pay for the inventory, it has less cash in the bank for other bills that may come due and investments. The purpose of this calculation is to prevent a business from buying too much inventory.

# Objective Three Self-Test

1) If a salon has a cost of goods sold of \$67,656 and an average inventory of \$13,905, then what is the inventory turnover?

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2) If a salon has a cost of goods sold of \$27,803 and an inventory turnover of 1.9148, then what is the average inventory?

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3) If a salon has 320 blocks of hard wax at the beginning of the month, and a total month sales of 110 blocks, what is the sales to stock ratio for the month?

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4) A salon has a sales to stock ratio of 2.89 and a beginning of the month stock of 2,104 units. What is the total month sales?

---

5) A business has current assets totaling \$6,700 and an inventory of \$2,100. It has current liabilities of \$23,000. What is the acid test ratio of the business?

---

6) Considering the information above, is the ratio good?

---

7) A business has \$8,800 cash in the bank and \$11,000 in other assets. The business has \$3,300 in inventory. If the business has an acid test ratio of 1.2, what are the current liabilities?

---

# Objective Three Self-Test Answers

1) Step one: write out the formula

$$ITO = \frac{\text{cost of goods sold}}{\text{average inventory for period}}$$

Step two: enter the numbers

$$ITO = \frac{67,656}{13,905}$$

Step three: simplify

$$ITO = 4.87$$

2) Step one: write out the formula

$$ITO = \frac{\text{cost of goods sold}}{\text{average inventory for period}}$$

Step two: enter the numbers

$$1.9148 = \frac{27,803}{\text{average inventory for period}}$$

Step three: cross multiply

$$\frac{1.9148}{1} = \frac{27,803}{\text{average inventory for period}}$$

Step four: simplify

$$27,803 = 1.9148 \times \text{average inventory for period}$$

Step five: divide each side by 1.9148

$$\frac{27,803}{1.9148} = \frac{1.9148 \times \text{average inventory for period}}{1.9148}$$

Step six: simplify

$$\$1,4520 = \text{average inventory for period}$$

3) Step one: write out the formula

$$SSR = \frac{\text{beginning of month stock}}{\text{total month sales}}$$

Step two: enter the numbers

$$SSR = \frac{320}{110}$$

Step three: simplify

$$SSR = 2.91$$

4) Step one: write out the formula

$$SSR = \frac{\text{beginning of month stock}}{\text{total month sales}}$$

Step two: enter the numbers

$$2.89 = \frac{2,104}{\text{total month sales}}$$

Step three: cross multiply

$$\frac{2.89}{1} = \frac{2,104}{\text{total month sales}}$$

Step four: simplify

$$2.89 \times \text{total month sales} = 2,104$$

Step five: divide each side by 2.89

$$\frac{2.89 \times \text{total month sales}}{2.89} = \frac{2,104}{2.89}$$

Step six: simplify

$$\text{total month sales} = \boxed{728 \text{ units}}$$

5) Step one: write out the formula

$$ATR = \frac{\text{current assets} - \text{inventory}}{\text{current liabilities}}$$

Step two: fill in the variables

$$ATR = \frac{6,700 - 2,100}{23,000}$$

Step three: simplify

$$ATR = \frac{4,600}{23,000}$$

Step four: simplify

$$ATR = \boxed{0.2} \text{ or } 0.2 : 1$$

6) No, this is not a good ratio.

7) Step one: write out the formula

$$ATR = \frac{\text{current assets} - \text{inventory}}{\text{current liabilities}}$$

Step two: fill in the variables

$$1.2 = \frac{(8,800 + 11,000) - 3,300}{\text{current liabilities}}$$

Step three: simplify

$$1.2 = \frac{19,800 - 3,300}{\text{current liabilities}}$$

Step four: simplify

$$1.2 = \frac{16,500}{\text{current liabilities}}$$

Step five: cross multiply

$$\frac{1.2}{1} = \frac{16,500}{\text{current liabilities}}$$

Step six: simplify

$$1.2(\text{current liabilities}) = 16,500$$

Step seven: divide each side by 1.2

$$\frac{1.2(\text{current liabilities})}{1.2} = \frac{16,500}{1.2}$$

Step eight: simplify

$$\text{current liabilities} = \boxed{\$13,750}$$

# Objective Four

*When you have completed this objective, you will be able to:*

Perform retail calculations for commission.

## What is Commission?

A *commission* is a fee that an employee collects from a business, when the employee performs a service or sells a retail product. A *commission rate* is the amount that a person earns in commission. The rate can be a flat fee or a percentage. For example, if a salesperson sells a TV, the business may pay the salesperson a flat fee of \$100 per sale. In a different store, a salesperson may receive 4% of the sales price of every TV that is sold.

In some cases, an employee can be paid both an hourly wage and a commission. In other instances, an employee may begin employment by only receiving a wage, and as they learn the job and become more proficient, their wage decreases and they begin to be paid commission. Some employers only pay their employees in commission. An *override* is a commission that changes depending on sales. For example, an esthetician may receive 15% commission on sales and services made in the month, up to \$4,000. If, during the month, their sales and services rise above \$4,000, their commission changes retroactively to 20%. The simplest commission calculation is based on gross sales (no deductions for returns).

**Example:** an esthetician is paid a commission of 24% on the gross value of all sales and services for the month. For the month of August, their gross for sales and services was \$12,750. What is their commission?

$$\text{commission} = \text{total gross} \times \text{commission\%}$$

$$\text{commission} = 12,750 \times 0.24$$

$$\text{commission} = \$3,060$$

A delay in payment usually occurs with commission earnings because they are always growing until the last day of the pay period. For instance, in the month of May, an esthetician is making sales and performing services right until the final day of the month. It takes time for the employer to tabulate the earnings and perform the accounting and bookkeeping duties. To make the situation more complicated, the esthetician may have had a high-sales month and jumped up to a higher commission rate in the final week. The employer must then review all the transactions for the month and apply the higher commission rate to all the sales.

Instead of paying commission on gross sales, employers can pay commission in a way that increases profits for the business or helps out the business in other ways. If an employer has stock that is about to expire, they may increase the commission on the sale of the stock in order to move it. A business may also pay commission based on the profits that the business makes. One method of doing this is to calculate and pay commission based on the gross margin. The gross margin is a type of profit margin (or way to calculate profits). The employee is then paid their commission on the gross margin of their transactions. The formula for gross margin is listed below:

$$\text{gross margin} = \frac{\text{price of item} - \text{COGS}}{\text{price of item}}$$

**Example 1:** the selling price of a product was \$48 and the COGS was \$24. What was the gross margin?

$$\text{gross margin} = \frac{\text{price of item} - \text{COGS}}{\text{price of item}} \times (100\%)$$

$$\text{gross margin} = \frac{48 - 24}{48}$$

$$\text{gross margin} = \frac{24}{48}$$

$$\text{gross margin} = 50\%$$

**Example 2:** the selling price of a product was \$48 and the COGS was \$36. What was the gross margin?

$$\text{gross margin} = \frac{\text{price of item} - \text{COGS}}{\text{price of item}} \times (100\%)$$

$$\text{gross margin} = \frac{48 - 36}{48} \times (100\%)$$

$$\text{gross margin} = \frac{12}{48} \times (100\%)$$

$$\text{gross margin} = 25\%$$

When the gross margins of example 1 and example 2 are compared, it becomes clear that the salon profits more from the sale of product 1. When a business bases their

commissions on profit (such as calculated by gross margin), it encourages employees to sell services and products that result in the largest monetary gain.

In some industries a commission may be split amongst employees. If more than one person is involved in a sale, the commission can be split between them. A manager or supervisor may also earn commissions on the sales made by the people they supervise.

# Objective Three Self-Test

1) What are two common forms of commission payment?

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2) What is an override?

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3) An esthetician is responsible for services totaling \$11,200 and sales totaling \$7,000. If they are paid a commission of 30% on gross sales and services, what was their commission?

---

4) An esthetician performs a service and charges the client \$145. The cost of the esthetician's wages to perform the service was \$60 and cost of products used during the service was \$20. What is the gross margin for the service?

---

5) An esthetician sells a product for \$72.50. If the COGS is \$51.00, what is the gross margin for the product?

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# Objective Three Self-Test Answers

1) Percentage and flat fee.

2) An override is a commission that changes depending on sales. If sales increase, the commission rate increases.

3) Step one: write out the formula  $commission = total\ gross \times commission\%$

Step two: fill in the variables  $commission = (11,200 + 7,000) \times 0.30$

Step three: simplify  $commission = 18,200 \times 0.30$

$$commission = \$5,460$$

4) Step one: write out the formula  $gross\ margin = \frac{price\ of\ item - COGS}{price\ of\ item}$

Step two: fill in the variables  $gross\ margin = \frac{145 - (60 + 20)}{145}$

Step three: simplify  $gross\ margin = \frac{145 - 80}{145}$

Step four: simplify  $gross\ margin = \frac{65}{145}$

$$gross\ margin = 44.8\%$$

5) Step one: write out the formula  $gross\ margin = \frac{price\ of\ item - COGS}{price\ of\ item}$

Step two: fill in the variables  $gross\ margin = \frac{72.50 - 51}{72.50}$

Step three: simplify  $gross\ margin = \frac{21.50}{72.50}$

Step four: simplify  $gross\ margin = 29.7\%$

# Module Summary Self-Test

1) The formula for cost of goods can be altered to solve for what two other values?

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2) Identify two things that make net sales different from gross sales.

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3) Which formula is used to compare the sales of a product to its inventory? A high number indicates fast sales.

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4) Which formula is used to calculate the amount of inventory a business is carrying?

---

5) What is the expense incurred in order to manufacture, create, or sell a product?

---

6) What concept is used to determine how much inventory a business can safely purchase?

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7) Why would a business prefer to pay commission based on the gross margin rather than on total sales?

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8) An esthetician receives a commission of 18% on services and a commission of 35% on product sales. For the month, they perform \$12,600 of services and sell \$4,900 of products. What is their pay for the month?

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9) If the retail price of a product is \$88.65 and the COGS is \$62.15, what is the gross margin?

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# Module Summary Self-Test Answers

- 1) Retail price and markup.
- 2) How many products were returned, damaged products, and missing inventory.
- 3)  $sell\ through\ \% = \frac{units\ sold}{units\ on\ hand + units\ sold}$
- 4)  $AI = \frac{beginning\ cost - end\ cost}{2}$
- 5) The cost of goods sold.
- 6) Open to buy.
- 7) Paying commission based on the gross margin encourages employees to sell services and products that have the highest profits for the business.
- 8) For this calculation, the commission for services must be calculated, then the commission for product sales must be calculated. Lastly, the two commissions must be added to determine the total pay.

For Services

$$commission = total\ gross \times commission\%$$

$$commission = 12,600 \times 0.18$$

$$commission = \$2,268$$

For Product Sales

$$commission = total\ gross \times commission\%$$

$$commission = 4,900 \times 0.35$$

$$commission = \$1,715$$

$$total\ commission = \$2,268 + \$1,715$$

$$total\ commission = \$3,983$$

9) Step one: write out the formula  $gross\ margin = \frac{price\ of\ item - COGS}{price\ of\ item}$

Step two: fill in the variables  $gross\ margin = \frac{88.65 - 62.15}{88.65}$

Step three: simplify  $gross\ margin = \frac{26.50}{88.65}$

Step four: simplify  $gross\ margin = 29.9\%$