Chapter 16

using math in sales

Section 16.1
Sales Transactions

Section 16.2
Cash Registers

Section 16.3
Purchasing, Invoicing, and Shipping
Before You Read

**PREDICT** What kinds of math does a salesperson use to finish a transaction?
OBJECTIVES

• **List** all types of retail sales transactions.

• **Process** purchases, returns, and exchanges.

• **Generate** and process sales documentation.

• **Calculate** sales tax, discounts, and shipping charges.
THE MAIN IDEA

There are many ways to complete a purchase transaction. Basic math skills are essential in all sales transactions.
VOCABULARY

- sales check
- layaway
- on-approval sale
- cash-on-delivery (COD) sale
- sales tax
- allowance
### The Six Types of Retail Sales Transactions

<table>
<thead>
<tr>
<th></th>
<th>Types of Retail Sales Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cash or Check</td>
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<tr>
<td>2.</td>
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<td>6.</td>
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</tbody>
</table>
The Six Types of Retail Sales Transactions

Types of Retail Sales Transactions

1. Cash or Check
2. Debit
3. Credit card
4. Layaway
5. On-approval
6. Cash-on-delivery
## Types of Retail Sales

<table>
<thead>
<tr>
<th>Type of Retail Sales</th>
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<tbody>
<tr>
<td>Cash or Check Sales</td>
</tr>
<tr>
<td>Debit Card Sales</td>
</tr>
<tr>
<td>Credit Card Sales</td>
</tr>
<tr>
<td><strong>Layaway Sales</strong></td>
</tr>
<tr>
<td>On-Approval Sales</td>
</tr>
<tr>
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</tr>
</tbody>
</table>

### Layaway
Removing merchandise from stock and keeping it in a separate area until the customer pays for it.

### On-Approval Sale
An agreement that allows a customer to take merchandise home for further consideration.

### Cash-on-Delivery (COD) Sale
A transaction that occurs when a customer pays for merchandise at the time of delivery.
### Advantages and Disadvantages of Different Types of Retail Sales

<table>
<thead>
<tr>
<th>Type of Retail Sale</th>
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<th>Disadvantages</th>
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Sales Transactions

## Types of Retail Sales

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<tbody>
<tr>
<td>Cash</td>
<td>Customer: Won’t overspend</td>
<td>Customer: May need to carry large amounts of cash</td>
</tr>
<tr>
<td></td>
<td>Retailer: Gets money immediately</td>
<td>Retailer: Must handle cash</td>
</tr>
<tr>
<td>Debit card</td>
<td>Customer: Won’t overspend</td>
<td>Customer: Money taken from account immediately</td>
</tr>
<tr>
<td></td>
<td>Retailer: Receives money immediately</td>
<td>Retailer: Must pay a fee</td>
</tr>
<tr>
<td>Credit card</td>
<td>Customer: Billed later</td>
<td>Customer: May overspend</td>
</tr>
<tr>
<td></td>
<td>Retailer: Increases sales</td>
<td>Retailer: Must pay percentage</td>
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</table>

*continued*
## Types of Retail Sales

### Advantages and Disadvantages of Different Types of Retail Sales

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## Types of Retail Sales

### Advantages and Disadvantages of Different Types of Retail Sales

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| Layaway             | Customer: Only pays a deposit  
                      Retailer: Keeps merchandise until entirely paid for                                      | Customer: Doesn't get merchandise immediately  
                      Retailer: Must store items until paid for                                                     |
| On-approval         | Customer: Has more time to make a decision  
                      Retailer: Provides a service to customers                                                   | Customer: Must return merchandise if decides not to buy  
                      Retailer: Does not get money until later and the merchandise may be returned               |
### Advantages and Disadvantages of Different Types of Retail Sales

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<td>Cash-on-delivery</td>
<td>Customer: Does not pay until delivery&lt;br&gt;Retailer: Provides a service to customers</td>
<td>Customer: Must pay a fee&lt;br&gt;Retailer: Does not receive payment until delivery</td>
</tr>
</tbody>
</table>
Sales Tax

**Sales Tax Facts**

- Paid only by the final user.
- A regressive tax.
- States want individuals to pay tax on Internet sales.

**sales tax**

A percentage fee levied by the government on the sale of goods and services.
Each of These Situations Requires a Different Type of Sales Transaction

<table>
<thead>
<tr>
<th>Return</th>
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<tr>
<td>Exchange</td>
</tr>
<tr>
<td>Allowance</td>
</tr>
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</table>

**allowance**
Partial return of a sale price for merchandise the customer has kept, for example if there is a defect.
Sales Tax

Delivery charges are generally exempt from sales tax; they are added after the sale tax has been calculated.
1. **Describe** a sales check and list the important information that it should include.

   A sales check is a written record of a sales transaction and should include information such as the date of the transaction, the items purchased, the purchase prices, sales tax, and the total amount due.
Sales Transactions

Section 16.1

2. **Compare** the fees a merchant must pay for accepting credit card purchases and debit card purchases.

For a debit card, the bank charges the merchant a flat fee, regardless of the amount. With credit cards, the merchant pays a percentage of the sale based on a sliding scale which varies based on the size of the store account and how the charges are processed.
3. **Distinguish** between a return, an exchange, and an allowance.

Return: merchandise brought back for a cash refund or credit.  
Exchange: merchandise switched for another item. Allowance: a partial return of the sale price for merchandise that the customer has kept, often because of a minor defect.
Before You Read

**PREDICT** What are some functions performed by cash registers and point-of-sale terminals?
OBJECTIVES

• **Name** the functions of cash registers and point-of-sale (POS) terminals.

• **Explain** the uses for Universal Product Codes (UPCs).

• **Make** change.
The cash register or point-of sale (POS) station is a cashier’s most important tool in completing a sales transaction.
Section 16.2

Cash Registers

VOCABULARY

- Universal Product Code (UPC)
- point-of-sale (POS) system
- till
- opening cash fund
Cash Registers

Section 16.2

Three Methods of Entering Information into an Electronic Cash Register and Three Safeguards Against Theft

Electronic Cash Registers

Methods of Entering Information

1.  
2.  
3.

Safeguards Against Theft/Counterfeiting

1.  
2.  
3.
Three Methods of Entering Information into an Electronic Cash Register and Three Safeguards Against Theft

### Electronic Cash Registers

#### Methods of Entering Information
1. Optical scanning
2. Electronic wand entry
3. Manual key entry

#### Safeguards Against Theft/Counterfeiting
1. Close cash drawer between transactions
2. Lock drawer when leaving it
3. Become familiar with currency
Cash Registers and Their Main Functions

Three Basic Sales Functions of Cash Registers

- Recording Sales
- Storing Cash and Sales Documents
- Providing Receipts
Cash Registers and Their Main Functions

Entering Transaction Data into an Electronic Cash Register

- Optical Scanning
- Electronic Wand Entry
- Manual Key Entry
Cash Registers and Their Main Functions

A combination barcode and number used to identify a product and manufacturer that must be on every item sold by the manufacturer.

**universal product code (UPC)**

Two Parts of a **Universal Product Code (UPC)**

- **UPC Number**
- **Machine-Readable Barcode**
A point-of-sale (POS) system can trigger replenishment of stock and manufacturing of replacement merchandise.
Radio frequency identification (RFID) is used to read labels on products.
Current Trends

On most cash registers, the **till** can be opened only during a transaction.

The till has ten compartments—five in the back and five in the front.

**till**

The cash drawer of a cash register.
Current Trends

The **opening cash fund** is also known as the *change fund*.

**opening cash fund**
A limited amount of money in the cash register at the beginning of business.
Section 16.2
Cash Registers

Current Trends

Making Change When Using a Non-POS System

Graphic Organizer

Step 1

Step 2

Step 3

Step 4

Step 5

Correct Change
Making Change When Using a Non-POS System

1. Announce Total Amount
2. Announce Amount Tendered
3. Place Money on Cash Drawer Ledge
4. Count Silently While Removing Change from Drawer
5. Count Aloud While Giving Customer Change
When balancing the till, it is not good to be over or short. In either case you made a mistake.
Theft and counterfeiting are important concerns when operating a cash register.
Changes in currency design are made in an effort to prevent counterfeiting.
1. **List** three functions of all cash registers and POS terminals.

All cash registers and POS terminals can perform three basic functions: (1) record sales, (2) store cash and sales documents, and (3) provide receipts.
2. **Describe** two ways to make change when a customer gives you a $50 bill for a purchase of $34.29.

Two ways to make change when a customer tenders a $50 bill for a purchase of $34.29 are: (1) Using a POS system with a customer display, you count out the change shown on the display, beginning with the largest denomination, hand the change to the customer and say aloud “$15.71” as you hand the change to the customer; (2) If the cash register does not have a customer display showing the change due, begin by announcing the total amount of the sale and then count up to the amount tendered. This involves the five steps listed on page 377 of the text.
3. **Explain** the Universal Product Code.

The Universal Product Code (UPC) is a combination barcode and number used to identify a product and manufacturer.
CONNECT When have you ordered something by mail? What types of forms are involved?
OBJECTIVES

• **Prepare** purchase orders and invoices.

• **Explain** shipping terms.
THE MAIN IDEA

Writing a purchase order, creating an invoice, and figuring shipping are part of the sales process, especially in business-to-business sales.
Purchasing, Invoicing, and Shipping

**VOCABULARY**

- purchase order (PO)
- invoice
- terms for delivery
- free-on-board (FOB)
List the Six Types of Information Needed to Complete a Purchase Order or Invoice

<table>
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<tbody>
<tr>
<td><strong>Purchase Order</strong></td>
</tr>
<tr>
<td>1. Item number</td>
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</table>

| **Invoice** |
|            |
|            |
|            |
|            |
|            |
|            |
### List the Six Types of Information Needed to Complete a Purchase Order or Invoice

#### Information Needed

<table>
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<th>Purchase Order</th>
<th>Invoice</th>
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<tr>
<td>1. Item number</td>
<td>1. Prices of goods</td>
</tr>
<tr>
<td>2. Quantity</td>
<td>2. Terms of sale</td>
</tr>
<tr>
<td>3. Description</td>
<td>3. Total</td>
</tr>
<tr>
<td>4. Unit</td>
<td>4. Taxes</td>
</tr>
<tr>
<td>5. Unit cost</td>
<td>5. Fees</td>
</tr>
<tr>
<td>6. Total</td>
<td>6. Amount due</td>
</tr>
</tbody>
</table>
Purchase Orders

A purchase order (PO) is a legal contract between a buyer and seller that lists the quantity, price, and description of the products ordered, along with the terms of payment and delivery.
Invoices

When filling an order based on a PO, a vendor includes an invoice with the delivered merchandise.

**invoice**

Itemized list of goods that include prices, terms of sale, total, taxes and fees, and amount due.
Dating terms state when a bill must be paid and the discount for paying early.
Parcel post is one type of standard surface delivery offered by the U.S. Postal Service.
Invoices

With COD (cash on delivery) shipping, the postal carrier will collect the amount due from the customer and forward it to the business.
Invoices

Terms for delivery is part of most agreements in business-to-business sales.

The final delivery arrangement made between the buyer and seller.
The terms for delivery are all variations of free on board (FOB).

**free on board (FOB)**
A delivery arrangement that means the price for goods includes delivery at the seller’s expense to a specified point and no farther.
Invoices

Provide Definitions for Each Type of FOB Delivery

- Free on Board
  - FOB Destination
  - FOB Shipping Point
  - FOB Factory Freight Prepaid
  - FOB Destination Charges Reversed
Section 16.3

Invoices

Provide Definitions for Each Type of FOB Delivery

- **Free on Board**
  - **FOB Destination**
    Goods belong to seller until destination and the seller pays for shipping.
  - **FOB Shipping Point**
    Buyer pays for shipping and is responsible for goods in transit.
  - **FOB Factory Freight Prepaid**
    Goods become property of buyer at factory, but seller pays shipping charges.
  - **FOB Destination Charges Reversed**
    Goods belong to buyer only when received; buyer pays shipping charges.
1. **Identify** the party who issues a purchase order (PO) in business-to-business sales.

   In business-to-business sales, the buyer issues a purchase order (PO).
2. **Define** the term *extension* and explain its calculation on a purchase order.

   The extension is the result of multiplying the number of units by the cost per unit.
3. **Explain** the term *2/10, net 30*

The terms 2/10, net 30 mean that there will be a 2 percent discount if paid within 10 days, and the invoice total must be paid within 30 days.
End of

Chapter 16

using math in sales

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Sales Transactions

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Cash Registers

Section 16.3
Purchasing, Invoicing, and Shipping