Guide 2: Merchandising, Inventory & Cash

Perpetual Inventory, FIFO/Avg Cost, LCNRV, Bank Reconciliation, Bad Debts, Notes Receivable

Videos to Watch

Topic	Video
First In First Out (FIFO) – Inventory Cost Flows	https://youtu.be/Hvul1enbwjk (8 min)
The Essential Guide to Inventory in Accounting	https://youtu.be/vGPn_Oo7UBQ (38 min)
How To Do A Bank Reconciliation (EASY WAY)	https://youtu.be/zhmO3DM3YiY (14 min)

Service vs Merchandising Companies

A **service company** sells work (consulting, repairs, legal advice). Its income statement: Revenue − Expenses = Net Income.

A **merchandising company** sells products (a store, a wholesaler). It has an extra step: Revenue − Cost of Goods Sold = Gross Profit, then − Expenses = Net Income.

Cost of Goods Sold (COGS) is the cost the company paid to buy the products that were sold. It's the biggest expense for most retailers.

Multi-Step Income Statement

Line	**Example**
Sales Revenue	$500,000
Less: Sales Returns & Allowances	($5,000)
Less: Sales Discounts	($2,000)
= **Net Sales**	**$493,000**
Less: Cost of Goods Sold	($300,000)
= **Gross Profit**	**$193,000**
Less: Operating Expenses (Rent, Salaries, etc.)	($100,000)
= **Net Income**	**$93,000**

Gross Profit Margin = Gross Profit / Net Sales. This tells you: for every dollar of sales, how much is left after paying for the product itself. A 40% margin means $0.40 of each sales dollar is gross profit.

Perpetual Inventory – How to Record Product Sales

In a perpetual inventory system, the inventory account is updated after every single transaction. You always know how much inventory you have.

The 4 core entries you must know:

Transaction	**Journal Entry**
1. Buy inventory on credit *(The product arrives. Record it as an asset.)*	Dr Inventory / Cr Accounts Payable
2a. Sell inventory – record revenue	Dr Cash (or AR) / Cr Sales Revenue
2b. Sell inventory – record cost *(Two entries: one for the selling price, one for what it cost you.)*	Dr Cost of Goods Sold / Cr Inventory
3. Return inventory to supplier *(Send defective goods back. Reduce what you owe.)*	Dr Accounts Payable / Cr Inventory
4a. Customer returns goods – reverse revenue	Dr Sales Returns / Cr Cash (or AR)
4b. Customer returns goods – add back to inventory *(Give the customer their money back, put the item back in stock.)*	Dr Inventory / Cr Cost of Goods Sold

Worked Problem 1: Perpetual Entries

Record these transactions:

1. Buy $20,000 of inventory on credit.

2. Sell inventory that cost $8,000 for $14,000 cash.
3. Return $3,000 of defective inventory to supplier.
4. Customer returns goods that sold for $2,000 (cost $1,200).

Solution:

#	Account	Dr/Cr	Amount
1	Inventory	Dr	$20,000
	Accounts Payable	Cr	$20,000
2a	Cash	Dr	$14,000
	Sales Revenue	Cr	$14,000
2b	Cost of Goods Sold	Dr	$8,000
	Inventory	Cr	$8,000
3	Accounts Payable	Dr	$3,000
	Inventory	Cr	$3,000
4a	Sales Returns	Dr	$2,000
	Cash	Cr	$2,000
4b	Inventory	Dr	$1,200
	Cost of Goods Sold	Cr	$1,200

Inventory Cost Formulas – FIFO and Average Cost

When you buy inventory at different prices, you need a method to decide which costs go to COGS (sold) and which stay in ending inventory (unsold).

FIFO (First-In, First-Out)

The idea: The oldest items in inventory are sold first. The newest items remain.

Think of it like a queue: The first items that came in are the first to go out. The items that arrived most recently are still sitting there.

Worked Problem 2: FIFO Perpetual

Date		Units	Cost/Unit
Jan 1	Beginning inventory	10	$10
Jan 5	Purchase	5	$12
Jan 10	Sale	8	
Jan 20	Purchase	10	$14
Jan 25	Sale	6	

Calculate COGS and ending inventory.

Step-by-step:

After Jan 1:	10 units @ $10 = $100
After Jan 5 purchase:	10@$10 + 5@$12 = $100 + $60 = $160
Jan 10 sale (8 units):	Under FIFO, take from the oldest batch (10@$10). 8 @ $10 = $80 COGS. Remaining: 2@$10 + 5@$12 = $20 + $60 = $80
After Jan 20 purchase:	2@$10 + 5@$12 + 10@$14 = $20 + $60 + $140 = $220
Jan 25 sale (6 units):	Take from oldest first. 2@$10 = $20. Then 4@$12 = $48. Total COGS for this sale = $20 + $48 = $68 Remaining: 1@$12 + 10@$14 = $12 + $140 = $152

Total COGS = $80 + $68 = $148.
Ending Inventory = $152.

Average Cost (AVCO)

The idea: After every purchase, calculate a new average cost per unit. Use that average for COGS until the next purchase.

Formula: New Average = (Total Cost of All Units) / (Total Number of Units)

Worked Problem 3: Average Cost Perpetual

Same data as Problem 2.

Step-by-step:

Start:	10 units @ \$10 = \$100. Avg = \$10.00
After Jan 5 purchase:	15 units, total \$160. New avg = \$160/15 = \$10.67
Jan 10 sale (8 units):	COGS = 8 × \$10.67 = \$85.33 Remaining: 7 units @ \$10.67 = \$74.67
After Jan 20 purchase:	17 units, total \$214.67. New avg = \$214.67/17 = \$12.63
Jan 25 sale (6 units):	COGS = 6 × \$12.63 = \$75.76 Remaining: 11 @ \$12.63 = \$138.91

Total COGS = \$85.33 + \$75.76 = \$161.09.
Ending Inventory = \$138.91.

Key difference: When prices rise, FIFO gives higher ending inventory and lower COGS (higher profit). Average Cost smooths everything out.

LCNRV – Lower of Cost and Net Realizable Value

If the value of your inventory drops below what you paid for it, you must write it down.

NRV (Net Realizable Value) = Selling Price − Costs to Complete and Sell.

If Cost > NRV: **Dr Loss (or COGS) / Cr Inventory** for the difference.

Example: Inventory cost = \$100. Current selling price = \$95, with \$10 to sell it. NRV = \$95 − \$10 = \$85. Cost = \$100. Write down by \$15. Dr COGS \$15 / Cr Inventory \$15.

Inventory Errors – How Mistakes Flow Through

If you count inventory wrong, it affects two years.

What Happened	Year 1 Net Income	Year 2 Net Income
Ending Inventory counted too **high**	**Overstated**	**Understated**
Ending Inventory counted too **low**	**Understated**	**Overstated**

Why it works this way: COGS = Beginning Inv + Purchases − Ending Inv. If ending inventory is too high, COGS is too low, so Net Income is too high. Next year, that same error becomes a too-high beginning inventory, making COGS too high and NI too low. The error reverses itself after two years.

Ratio: Inventory Turnover = COGS / Average Inventory. Days in Inventory = 365 / Turnover.

Bank Reconciliation

Your books and your bank statement will almost never show the same cash balance. There are timing differences (checks you sent that haven't cleared yet, deposits that haven't arrived) and items the bank processed that you don't know about yet (fees, interest).

The bank reconciliation finds the **true** cash balance.

The Process

Bank Side	Book Side
Start: Bank statement balance	Start: Company's cash account balance
+ Deposits in transit (money sent, not yet at bank)	+ Interest earned (bank added it)
− Outstanding checks (checks written, not yet cashed)	− Bank service charges (bank took it)
± Bank errors	− NSF checks (customer's check bounced)
	± Book errors (you typed a wrong amount)
= Adjusted Balance	**= Adjusted Balance**

Both adjusted balances must match. Only the book-side adjustments need journal entries (the bank already recorded their side).

Worked Problem 4: Bank Reconciliation

Bank statement shows $12,500. Company books show $10,200. Additional info:

- Deposits in transit: $3,000
- Outstanding checks: $1,200
- Bank service charge: $50
- Interest earned: $30
- NSF check (customer's check bounced): $180
- A check for $500 was recorded in the books as $450 ($50 error)

Solution:

Bank side:	
Balance per bank	$12,500
+ Deposits in transit	$3,000
− Outstanding checks	($1,200)
Adjusted bank balance	**$14,300**
Book side:	
Balance per books	$10,200
+ Interest earned	$30
− Service charge	($50)
− NSF check	($180)
+ Error correction	$50
Adjusted book balance	**$14,300**

Journal entries needed:

- Interest: Dr Cash $30 / Cr Interest Revenue $30
- Service charge: Dr Bank Charges $50 / Cr Cash $50
- NSF check: Dr Accounts Receivable $180 / Cr Cash $180 (the customer still owes you)
- Error: Dr Cash $50 / Cr the original account (e.g., Expense) $50

Accounts Receivable and Bad Debts

When you sell on credit, some customers won't pay. You need to estimate this.

Method 1: Percentage of Credit Sales

Formula: Bad Debt Expense = Net Credit Sales × Estimated %.

Example: $400,000 in credit sales, 2% estimated uncollectible.
Expense = $400,000 × 2% = $8,000.
Dr Bad Debt Expense $8,000 / Cr Allowance for Doubtful Accounts $8,000

This method is simple. It matches the expense to the period the sales happened.

Method 2: Aging of Accounts Receivable

You look at each customer's balance and estimate how likely they are to pay based on how old the balance is.

Age of Balance	Amount	% Likely Uncollectible
0-30 days	$50,000	2%
31-60 days	$20,000	10%
Over 60 days	$10,000	30%

Target Allowance = ($50K × 2%) + ($20K × 10%) + ($10K × 30%) = $1,000 + $2,000 + $3,000 = $6,000.

The entry: If the Allowance account currently has a $1,000 credit balance, you need to add $5,000 to reach $6,000.

Dr Bad Debt Expense $5,000 / Cr Allowance $5,000

The Three Bad Debt Entries

Action	Journal Entry
1. Estimate bad debts	Dr Bad Debt Expense / Cr Allowance for Doubtful Accounts
2. Write off a specific customer's balance	Dr Allowance / Cr Accounts Receivable
3. Customer pays after being written off	(a) Dr AR / Cr Allowance (reverse the write-off) (b) Dr Cash / Cr AR (record the payment)

Important: Writing off an account does NOT affect net income. It just reduces both AR and the Allowance by the same amount. The expense was already recorded when you estimated it.

Notes Receivable

Sometimes a customer signs a formal promise to pay with interest.

Interest = Principal × Annual Rate × (Days / 360)

Example: $10,000 note, 6% interest, 90-day term.
Interest = $10,000 × 6% × 90/360 = $10,000 × 0.06 × 0.25 = $150.

- **At issuance:** Dr Notes Receivable $10,000 / Cr Cash (or AR) $10,000
- **At maturity (paid):** Dr Cash $10,150 / Cr Notes Rec $10,000 / Cr Interest Revenue $150
- **If dishonored (not paid):** Dr Accounts Receivable $10,150 / Cr Notes Rec $10,000 / Cr Interest Revenue $150

Ratios: Receivables Turnover = Net Credit Sales / Avg AR.
Average Collection Period = 365 / Receivables Turnover.

Practice Problems – Exam Style

Problem A: FIFO and Average Cost (15 marks)

Date		Units	Cost/Unit
Mar 1	Beginning	20	$15
Mar 8	Purchase	15	$18
Mar 15	Sale	18	
Mar 22	Purchase	12	$20
Mar 29	Sale	10	

Calculate COGS and ending inventory under (a) FIFO and (b) Average Cost.

Solution (a) – FIFO:

Mar 15 sale (18 units): Take 18 from the 20@$15 batch. COGS = 18×$15 = $270.
Remaining: 2@$15 + 15@$18 = $30 + $270 = $300.

Mar 29 sale (10 units): Take 2@$15 = $30, then 8@$18 = $144. COGS = $174.
Remaining: 7@$18 + 12@$20 = $126 + $240 = $366.

Total COGS = $270 + $174 = $444. **Ending Inv** = $366.

Solution (b) – Avg Cost:

Start: 20@$15 = $300, avg = $15.00.
After Mar 8: 35 units, $570, avg = $16.29.
Mar 15 sale: 18@$16.29 = $293.14. Remaining: 17@$16.29 = $276.86.
After Mar 22: 29 units, $516.86, avg = $17.82.

Mar 29 sale: 10@$17.82 = $178.22. Remaining: 19@$17.82 = $338.64.
Total COGS = $293.14 + $178.22 = $471.36. **Ending Inv** = $338.64.

Problem B: Bank Reconciliation (8 marks)

Bank = $8,400. Books = $6,100.
Deposit in transit $2,500. Outstanding checks $900.
Interest $25. NSF $120. Service charge $35.
Error: recorded $400 check as $340 (add $60 to books).

Bank:	Balance	$8,400
	+ Deposit in transit	$2,500
	− Outstanding checks	($900)
	Adjusted	**$10,000**
Books:	Balance	$6,100
	+ Interest	$25
	− Service charge	($35)
	− NSF	($120)
	+ Error	$60
	Adjusted	**$10,000**

Journal entries: Dr Cash $25 / Cr Int Rev $25. Dr Bank Chg $35 / Cr Cash $35.
Dr AR $120 / Cr Cash $120. Dr Cash $60 / Cr Expense $60.

Problem C: Bad Debts (6 marks)

Credit sales = $400K. Allowance has $3K credit balance.

1. % of sales method (2%): **Dr Bad Debt Exp $8K / Cr Allowance $8K**
2. Aging target = $12K: Need $9K more. **Dr Bad Debt Exp $9K / Cr Allowance $9K**
3. Write off $1,500 customer: **Dr Allowance $1.5K / Cr AR $1.5K**

Practice MCQs

1. **When a company sells inventory on credit under perpetual system, how many journal entries are needed?**
   (a) One – just record the sale
   (b) Two – one for revenue, one for COGS
   (c) Three – revenue, COGS, and inventory adjustment
   (d) None until year-end
   Answer: (b) First entry records revenue at selling price. Second entry moves cost from Inventory to COGS.

2. **Beginning inventory = $20K, Purchases = $100K, Ending = $30K. Cost of Goods Sold?**
   (a) $110K
   (b) $90K
   (c) $100K
   (d) $50K
   Answer: (b) $20K + $100K − $30K = $90K.

3. **When prices are rising, which method gives higher Net Income?**
   (a) FIFO
   (b) Average Cost
   (c) Both the same
   (d) Depends on quantity
   Answer: (a) FIFO uses older, cheaper costs for COGS, so COGS is lower and Net Income is higher.

4. **Ending inventory is understated by $5,000. What happens to Year 1 Net Income?**
   (a) Overstated by $5K

(b) Understated by $5K

(c) Overstated by $10K

(d) No effect

Answer: (b) Lower ending inventory = higher COGS = lower Net Income.

5. **Inventory cost = $100, NRV = $85. The LCNRV adjustment is:**

   (a) No entry needed

   (b) Dr Loss $15 / Cr Inventory $15

   (c) Dr Inventory $15 / Cr Gain $15

   (d) Dr COGS $85

   Answer: (b) Cost exceeds NRV by $15. Write down.

6. **A deposit in transit on a bank reconciliation should be:**

   (a) Subtracted from the book balance

   (b) Added to the bank balance

   (c) Subtracted from the bank balance

   (d) Added to the book balance

   Answer: (b) The company recorded the deposit but the bank hasn't received it yet.

7. **An NSF check on a bank reconciliation is:**

   (a) Added to the bank balance

   (b) Deducted from the book balance

   (c) Added to the book balance

   (d) Ignored

   Answer: (b) The customer's check bounced. The company must reduce its book cash and bill the customer again.

8. **Writing off an uncollectible account under the allowance method:**

   (a) Dr Bad Debt Exp / Cr Allowance

   (b) Dr Allowance / Cr Accounts Receivable

   (c) Dr Bad Debt Exp / Cr AR

   (d) Dr AR / Cr Allowance

   Answer: (b) Reduces both the allowance and the receivable. No expense at this point.

9. **A $15,000 note, 8%, 90 days. How much interest?**

   (a) $1,200

   (b) $300

   (c) $400

   (d) $600

   Answer: (b) $\$15{,}000 \times 0.08 \times 90/360 = \$300$.

10. **Under the aging method, if the target allowance is $10K and the current balance is $3K, the entry is:**

    (a) Dr $10K / Cr $10K

    (b) Dr $7K / Cr $7K

    (c) Dr $3K / Cr $3K

    (d) No entry

    Answer: (b) The entry is the amount needed to reach the target: $\$10K - \$3K = \$7K$.