Inventory Records

Inventory records affect the **balance sheet** (inventory, asset) and the **income statement** (cost of goods sold, expense).There are two methods of record keeping for inventory: periodic and perpetual. The periodic method is done by taking a physical count and costing the inventory over a specific time period (e.g. weekly) to determine the cost of sales. The perpetual method is done by continuously updating the inventory with each purchase and sale of inventory.

There are four different methods of inventory valuation: (1) specific item cost; (2) first-in, first-out (FIFO); (3) last-in, first-out (LIFO); and (4) weighted average cost. This handout covers the last three types.

FIFO inventory control: whatever inventory items are received first (oldest) are assumed to be sold first, leaving the newest inventory items in stock.

LIFO inventory control: whatever inventory items are received last (newest) are assumed to be sold first, leaving the oldest inventory items in stock.

Weighted average cost (WAC): calculates a weighted average cost for each item of inventory available for sale.

To determine cost of sales (or cost of goods sold), use the following formula:

Beginning inventory (BI) + Purchases (P) − Ending inventory (EI) = Cost of Goods Sold (CGS)

Example: Use FIFO, LIFO, and WAC to find the cost of goods sold and the value of the remaining inventory at the end of the month.
June 1: Beginning balance 3 units at $20 each.
June 2: Purchased 8 items at $15 each.
June 6: Sold 6 items.
June 15: Purchased 4 items at $18 each.
June 20: Sold 7 items.

You can use a table as shown on the next page to keep track of inventory transactions, make a drawing showing "boxes" of inventory at different prices and imagine yourself filling up the boxes as inventory is purchased and pulling items out of them as inventory is sold, or you can simply do the calculation requested.

Using FIFO, the oldest items will be sold first. On June 6, to sell 6 items: sell the oldest 3 items that cost $20 each and the next oldest 3 items that cost $15 each. The items sold are removed from the inventory balance available.

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FIFO Table :

Item description			Balance Available
Date	Purchase Received	Issued Sales	Units x Cost = Tot. Cost
June 1	Balance forward		3 @ $20.00 = $60.00
2	8 @ $15.00 = $120.00		3 @ $20.00 = $60.00 8 @ $15.00 = $120.00
6		3 @ $20.00 = $60.00 3 @ $15.00 = $45.00	5 @ $15.00 = $75.00
15	4 @ $18.00 = $72.00		5 @ $ 15.00 = $75.00 4 @ $18.00 = $72.00
20		5 @ $15.00 = $75.00 2 @ $18.00 = $36.00	2 @ $18.00 = $36.00
Ending	Purchases = $192.00	CS = $216.00	Ending Inv. = $36.00

At the end, check that   BI + P – EI = CS $60 + $192 – $36 = $216 ✅

Without using a table, our mental picture of inventory has to be very clear. To calculate cost of goods sold: (3 x $20 + 3 x $15) + (5 x $15 + 2 x $18) = $216
To find the ending inventory: (2 x $18) = $36 (or use the equation of BI + P – CS to find EI)

For LIFO, the newest items will be sold first. Now on June 6, the 6 items sold come from the inventory that cost $15 each. On June 20, in order to sell 7 items, sell the newest 4 that cost $18 each, the next 2 items that cost $15, and one of the oldest that cost $20.

LIFO Table:

Item description			Balance Available
Date	Purchase Received	Issued Sales	Units x Cost = Tot. Cost
June 1	Balance forward		3 @ $20.00 = $60.00
2	8 @ $15.00 = $120.00		3 @ $20.00 = $60.00 8 @ $15.00 = $120.00
6		6 @ $15.00 = $90.00	3 @ $20.00 = $60.00 2 @ $15.00 = $30.00
15	4 @ $18.00 = $72.00		3 @ $20.00 = $60.00 2 @ $15.00 = $30.00 4 @ $18.00 = $72.00
20		4 @ $18.00 = $72.00 2 @ $15.00 = $30.00 1 @ $20.00 = $20.00	2 @ $20.00 = $40.00
Ending	Purchases = $192.00	CS = $212.00	Ending Inv. = $40.00

Again check that BI + P – EI = CS
$60 + $192 – $40 = $212   ✅

For WAC, on June 2, when 8 new items @ $15 are purchased, we take the sum of inventory value ($120 + 60) and divide by the total number of goods (11) to get the new cost for each good ($16.36 each). This is the price we will value and record as cost of goods sold until there is another inventory purchase.
WAC:

Item description			Balance Available
Date	Purchase Received	Issued Sales	Units x Cost = Tot. Cost
June 1	Balance forward		3 @ $20.00 = $60.00
2	8 @ $15.00 = $120.00		11 @ $16.36 = $179.96
6		6 @ $16.36 = $98.16	5 @ $16.36 = $81.80
15	4 @ $18.00 = $72.00		9 @ $17.09 = $153.81
20		7 @ $17.09 = $119.63	2 @ $17.09 = $34.18
Ending	Purchases = $192.00	CS = $217.79	Ending Inv. = $34.18

Cost of Goods sold calculation for June 6 = (3 x $20 + 8 x $15)/11 units   x 6 units sold = $98.16
Cost of goods sold for June 20 = (5 x $16.36 + 4 x $18)/ 9 units total   x 7 units sold = $119.63

Practice Problem

1. Beginning inventory was $26,000, ending inventory was $18,000, and cost of goods sold was $94,000. What was the amount of inventory purchased?

2. On January 1, inventory was $37,000. Inventory purchases for the month of January were $54,000 and the inventory balance on January 31 was $19,000. What was the cost of goods sold?

3. Beginning inventory was $41,000, inventory purchased was $72,000, and cost of goods sold was $100,000. What was the ending inventory?

4. The following information is taken form a perpetual inventory record. Calculate the value of ending inventory and cost of sales for the period ending Aug 31, using: (a) FIFO (b) LIFO (c) weighted average cost.

   August 1: Beginning balance was 4 @ $12
   August 3: Sale of 2 items
   August 5: Purchase of 6 items @ $12.50
   August 8: Sale of 3 items
   August 11: Sale of 3 items
   August 14: Purchase of 8 items @ $13
   August 16: Sale of 4 items
   August 19: Sale of 3 items
   August 22: Purchase of 5 items @ $13.50
   August 25: Sale of 4 items
   August 29: Sale of 2 items

5. The following entries were recorded for a company at November 30, 2014. As of November 30, there are 8 remaining items on hand.

Nov 1	Beginning inventory	10 units @	$75	=	$750
Nov 13	Purchase	7 units @	$80	=	$560
Nov 22	Purchase	12 units @	$85	=	$1020

a. Journalize the total November purchases in one summary entry. All purchases were on credit.
b. Journalize the total sales and cost of goods sold in two summary entries. The selling price was $250 per unit and all sales were on credit. The business uses the FIFO inventory method.
c. Under FIFO, how much gross profit would the business earn? What is the value of the ending inventory?
d. Would the gross profit be larger or smaller if the company used WAC inventory method instead?

Solutions

1. $86,000
2. $72,000
3. $13,000
4. (a) FIFO

Item description			Balance Available
Date	**Purchase Received**	**Issued Sales**	**Units x Cost = Tot. Cost**
Aug. 1	Balance forward		4 @ $12.00 = $48.00
3		2 @$12.00 = $24.00	2 @ $12.00 = $24.00
5	6 @ $12.50 = $75.00		2 @ $12.00 = $24.00 6 @ $12.50 = $75.00
8		2 @ $12.00 = $24.00 1 @ $12.50 = $12.50	5 @ $12.50 = $62.50
11		3 @ $12.50 = $37.50	2 @ $ 12.50 = $25.00
14	8 @ $13.00 = $104.00		2 @ $12.50 = $25.00 8 @ $13.00 = $104.00
16		2 @ $12.50 = $25.00 2 @ $13.00 = $26.00	6 @ $13.00 = $78.00
19		3 @ $13.00 = $39.00	3 @ $13.00 = $39.00
22	5 @ $13.50 = $67.50		3 @ $13.00 = $39.00 5 @ $13.50 = $67.50
25		3 @ $13.00 = $39.00 1@ $13.50 = $13.50	4 @ $13.50 = $54.00
29		2 @ $13.50 = $27.00	2 @ $13.50 = $27.00
Ending	**Purchases = $246.50**	**Cost of sales = $267.50**	**Ending Inv. = $27.00**

(b) LIFO

Item description			Balance Available
Date	**Purchase Received**	**Issued Sales**	**Units x Cost = Tot. Cost**
Aug. 1	Balance forward		4 @ $12.00 = $48.00
3		2 @$12.00 = $24.00	2 @ $12.00 = $24.00
5	6 @ $12.50 = $75.00		2 @ $12.00 = $24.00 6 @ $12.50 = $75.00
8		3 @ $12.50 = $37.50	2 @ $12.00 = $24.00 3 @ $12.50 = $37.50
11		3 @ $12.50 = $37.50	2 @ $ 12.00 = $24.00
14	8 @ $13.00 = $104.00		2 @ $12.00 = $24.00 8 @ $13.00 = $104.00
16		4 @ $13.00 = $52.00	2 @ $12.00 = $24.00 4 @ $13.00 = $52.00
19		3 @ $13.00 = $39.00	2 @ $12.00 = $24.00 1 @ $13.00 = $13.00
22	5 @ $13.50 = $67.50		2 @ $12.00 = $24.00 1 @ $13.00 = $13.00 5 @ $13.50 = $67.50

25		4 @ $13.50 = $54.00	2 @ $12.00 = $24.00 1 @ $13.00 = $13.00 1 @ $13.50 = $13.50
29		1 @ $13.50 = $13.50 1 @ $13.00 = $13.00	2 @ $12.00 = $24.00
Ending	**Purchases = $246.50**	**Cost of sales = $270.50**	**Ending Inv. = $24.00**

(c) Weighted average cost

Item description			Balance Available
Date	**Purchase Received**	**Issued Sales**	**Units x Cost = Tot. Cost**
Aug. 1	Balance forward		4 @ $12.00 = $48.00
3		2 @$12.00 = $24.00	2 @ $12.00 = $24.00
5	6 @ $12.50 = $75.00		8 @ $12.38 = $99.04
8		3 @ $12.38 = $37.14	5 @ $12.38 = $61.90
11		3 @ $12.38 = $37.14	2 @ $ 12.38 = $24.76
14	8 @ $13.00 = $104.00		10 @ $12.88 = $128.80
16		4 @ $12.88 = $51.52	6 @ $12.88 = $77.28
19		3 @ $12.88 = $38.64	3 @ $12.88 = $38.64
22	5 @ $13.50 = $67.50		8 @ $13.27 = $106.16
25		4 @ $13.27 = $53.08	4 @ $13.27 = $53.08
29		2 @ $13.27 = $26.54	2 @ $13.27 = $26.54
Ending	**Purchases = $246.50**	**Cost of sales = $268.06**	**Ending Inv. = $26.54**

5.

	Account Title	Debit	Credit
a.	Inventory ($560 +1,020)	$1,580	
	Accounts payable		$1,580
b.	Accounts receivable (21 x $250)	$5,250	
	Sales revenue		$5,250
	Cost of goods sold ($750 + $560 + 4 x $85)	$1,650	
	Inventory		$1,650

c. Sales revenue $5,250
   Cost of goods   (1,650)
   Gross profit   3,600

   Ending inventory = 8 items x $85/each = $680   OR
   Ending Inventory = Beg Inv + Purchases – CGS
             = $750 + 1,580 – 1,650
             = 680

d. If the company had used the WAC method, the gross profit would be smaller, as cost of goods would be larger ($1687).