

## SOLUTIONS

## Learning Goal 22

## Multiple Choice

1. b
2. d A purchase discount is recorded when payment is made.
3. a The payment is within the discount period, so  $\$5,000 \times .02 = \$100$ .
4. b The discount is  $(\$1,000/.98) = \$1,020.41 - \$1,000 = \$20.41$  discount.
5. d  $(\$2,500 \times .99) + \$150 = \$2,625$
6. c
7. d The return of the inventory increases inventory and reduces cost of goods sold.
8. c    9. a    10. b    11. a
12. b Consignment of inventory does not change the ownership of the inventory.
13. d

## Reinforcement Problems

## LG 22-1.

- a. The new contra accounts are sales returns and allowances and sales discounts. They reduce net sales, thereby reducing net income.
- b. FOB means “free on board” and for most merchants refers to the location during the shipping process at which title (ownership) of the merchandise transfers to the buyer. It is also used to refer to the location, up to which the seller is responsible for the shipping costs and after which the buyer is responsible for shipping costs (if no other shipping arrangement is made between them). FOB is especially important to determine exactly when a sale may properly be recorded and when a buyer must claim ownership of the merchandise.
- c. In a perpetual system, inventory shrinkage is recorded by an adjusting entry that debits Cost of Goods Sold and credits Merchandise Inventory.
- d. The buyer will pay  $\$1,000 \times .8 \times .98 = \$784$ . A trade discount is an adjustment to the list price of merchandise, often given for large quantity or special-situation purchases. A purchase discount (the 2/10, n/30 terms) is given for quick payment; in this case, within 10 days. The trade discount is always calculated first and is generally not recorded as a separate item.
- e. A purchase return and allowance is recorded by the *buyer*. It records the amount of credit received from the seller for unsatisfactory merchandise. The same credit recorded on the books of the *seller* is a sales return and allowance.

## LG 22-2.

- a. \$3,970    b. \$14,911    c. \$3,000 ( $\$147,000/.98 = \$150,000 - \$147,000$ )    d. \$5,769
- e. \$169,444    f. \$3,180 ( $\$159,000 \times .02 = \$3,180$ )    g. \$155,820    h. \$13,470
- i. \$220,500 ( $\$4,410/.02 = \$220,500$ )    j. \$845 (calculate k first)    k. \$215,010

	Merchandise Inventory			Cost of Goods Sold	
Beginning inventory	-0-				
Purchases	220,500	4,410	Purchase discounts		
Freight-in	845	1,925	Purchase returns		
Cost of goods available	215,010				
Ending inventory	11,200	203,810	Cost of goods sold	203,810	

**SOLUTIONS****Learning Goal 22, continued**

LG 22-3. See the table on page 468 for the solution.

LG 22-4.

**Buyer Company**

June 11	Merchandise Inventory		15,000	
	Accounts Payable			15,000
12	Merchandise Inventory		9,200	
	Accounts Payable			9,200
15	Accounts Payable		5,000	
	Merchandise Inventory			5,000
17	Merchandise Inventory		5,000	
	Accounts Payable			5,000
20	Accounts Payable		10,000	
	Merchandise Inventory			200
	Cash			9,800
	(\$10,000 × .98 = \$9,800)			
22	Accounts Payable		9,200	
	Merchandise Inventory			90
	Cash			9,110
	(\$9,000 × .99) + \$200 = \$9,110			
27	Accounts Payable		4,000	
	Merchandise Inventory			80
	Cash			3,920
	(\$3,920/.98 = \$4,000 invoice amount)			
29	Merchandise Inventory		150	
	Cash			150

**SOLUTIONS****Learning Goal 22, continued****LG 22-4, continued****Seller Company**

June 11	Accounts Receivable		15,000	
	Sales			15,000
	Cost of Goods Sold		12,000	
	Merchandise Inventory			12,000
12	Accounts Receivable		9,200	
	Cash			200
	Sales			9,000
	Cost of Goods Sold		7,500	
	Merchandise Inventory			7,500
15	Sales Returns and Allowances		5,000	
	Accounts Receivable			5,000
	Merchandise Inventory		4,000	
	Cost of Goods Sold			4,000
17	Accounts Receivable		5,000	
	Sales			5,000
	Cost of Goods Sold		3,000	
	Merchandise Inventory			3,000
20	Cash		9,800	
	Sales Discounts		200	
	Accounts Receivable			10,000
22	Cash		9,110	
	Sales Discounts		90	
	Accounts Receivable			9,200
27	Cash		3,920	
	Sales Discounts		80	
	Accounts Receivable			4,000
29	(No entry by seller)			

## SOLUTIONS

## Learning Goal 22, continued

## LG 22-5.

Date	Account	Post. Ref.	Dr.	Cr.
August 1	Merchandise Inventory		12,000	
	Accounts Payable			12,000
2	Merchandise Inventory		4,100	
	Accounts Payable			4,100
7	Accounts Receivable		8,000	
	Sales			8,000
7	Cost of Goods Sold		4,500	
	Merchandise Inventory			4,500
9	Accounts Receivable		4,000	
	Sales			4,000
9	Cost of Goods Sold		2,100	
	Merchandise Inventory			2,100
10	Accounts Payable		2,000	
	Merchandise Inventory			2,000
11	Accounts Payable		10,000	
	Merchandise Inventory			200
	Cash			9,800
	Merchandise Inventory		150	
	Cash			150
12	Accounts Payable		4,100	
	Merchandise Inventory			40
	Cash			4,060

**SOLUTIONS****Learning Goal 22, continued****LG 22-5, continued**

<b>Date</b>	<b>Account</b>	<b>Post. Ref.</b>	<b>Dr.</b>	<b>Cr.</b>
August 15	Sales Returns and Allowances		500	
	Accounts Receivable			500
	Merchandise Inventory		275	
	Cost of Goods Sold			275
16	Accounts Receivable		10,000	
	Sales			10,000
16	Cost of Goods Sold		6,500	
	Merchandise Inventory			6,500
17	Cash		2,425	
	Sales Discounts		75	
	Accounts Receivable			2,500
18	Cash		3,880	
	Sales Discounts		120	
	Accounts Receivable			4,000
24	Merchandise Inventory		25,000	
	Accounts Payable			25,000
25	Cash		2,910	
	Sales Discounts		90	
	Accounts Receivable			3,000
31	Cash		24,500	
	Notes Payable			24,500
31	Accounts Payable		25,000	
	Merchandise Inventory			500
	Cash			24,500
31	Cost of Goods Sold		1,800	
	Merchandise Inventory			1,800

## SOLUTIONS

## Learning Goal 22, continued

LG 22-5, *continued**Comments:*

**August 17:** The payment received from Baton Rouge Corporation is \$2,500 of the *invoice* (gross) amount, so the discount is based on this amount.

**August 25:** The payment received from St. Petersburg Company is the amount of *cash received*. Because this is within the discount period, the cash is considered to be the amount after applying the discount percent, which means that it is 97% of the larger amount. So,  $\$2,910/.97 = \$3,000$  determines the amount of the receivable to credit.

**August 27:** The purchase from Orlando Company is FOB *destination*, and there is no indication that the goods have arrived, so title has not transferred to buyer. If title of goods has not transferred to buyer, there is no purchase to record yet.

**August 31:** The \$1,800 is inventory shrinkage.

## LG 22-6.

## Buyer Company

Date	Account	Post. Ref.	Dr.	Cr.
April 1	Merchandise Inventory		15,000	
	Accounts Payable			15,000
3	Merchandise Inventory		9,200	
	Accounts Payable			9,200
4	Accounts Payable		5,000	
	Merchandise Inventory			5,000
5	Merchandise Inventory		5,000	
	Accounts Payable			5,000
6	Equipment		3,675	
	Accounts Payable			3,675
11	Accounts Payable		10,000	
	Merchandise Inventory			200
	Cash			9,800
13	Accounts Payable		9,200	
	Merchandise Inventory			90
	Cash			9,110

**SOLUTIONS****Learning Goal 22, continued****LG 22-6, continued**

<b>Date</b>	<b>Account</b>	<b>Post. Ref.</b>	<b>Dr.</b>	<b>Cr.</b>
April 15	Merchandise Inventory		17,100	
	Accounts Payable			17,100
15	Accounts Payable		4,000	
	Merchandise Inventory			80
	Cash			3,920
19	Supplies		525	
	Cash			525
20	Merchandise Inventory		11,000	
	Accounts Payable			11,000
30	Accounts Payable		5,500	
	Merchandise Inventory			110
	Cash			5,390
31	Accounts Payable		1,000	
	Cash			1,000
31	Cash		126	
	Supplies			126

**Seller Company**

<b>Date</b>	<b>Account</b>	<b>Post. Ref.</b>	<b>Dr.</b>	<b>Cr.</b>
April 1	Accounts Receivable		15,000	
	Sales			15,000
1	Cost of Goods Sold		9,000	
	Merchandise Inventory			9,000
3	Accounts Receivable		9,200	
	Sales			9,200

**SOLUTIONS**

## Learning Goal 22, continued

LG 22-6, *continued*

<b>Date</b>	<b>Account</b>	<b>Post. Ref.</b>	<b>Dr.</b>	<b>Cr.</b>
April 3	Cost of Goods Sold		5,400	
	Merchandise Inventory			5,400
4	Sales Returns and Allowances		5,000	
	Accounts Receivable			5,000
4	Merchandise Inventory		3,000	
	Cost of Goods Sold			3,000
5	Accounts Receivable		5,000	
	Sales			5,000
5	Cost of Goods Sold		3,000	
	Merchandise Inventory			3,000
6	Accounts Receivable		3,675	
	Sales			3,500
	Sales Tax Payable			175
	Cost of Goods Sold		2,100	
	Equipment Inventory			2,100
11	Cash		9,800	
	Sales Discounts		200	
	Accounts Receivable			10,000
13	Cash		9,110	
	Sales Discounts		90	
	Accounts Receivable			9,200
15	Accounts Receivable		17,100	
	Sales			17,100

**SOLUTIONS****Learning Goal 22, continued****LG 22-6, continued**

<b>Date</b>	<b>Account</b>	<b>Post. Ref.</b>	<b>Dr.</b>	<b>Cr.</b>
April 15	Cost of Goods Sold		12,000	
	Merchandise Inventory			12,000
15	Cash		3,920	
	Sales Discounts		80	
	Accounts Receivable			4,000
19	Cash		525	
	Sales			500
	Sales Tax Payable			25
19	Cost of Goods Sold		200	
	Supplies Inventory			200
20	Accounts Receivable		11,000	
	Sales			11,000
20	Cost of Goods Sold		6,600	
	Merchandise Inventory			6,600
30	Cash		5,390	
	Sales Discounts		110	
	Accounts Receivable			5,500
31	Cash		1,000	
	Accounts Receivable			1,000
31	Sales Returns and Allowances		120	
	Sales Tax payable		6	
	Cash			126
31	Supplies Inventory		48	
	Cost of Goods Sold			48

## SOLUTIONS

## Learning Goal 22, continued

## LG 22-6, continued

**Comments:** This seller uses only one Cost of Goods Sold account for all sales; however, many merchants prefer to use a separate Cost of Goods Sold account for each type of merchandise.

- April 6:** Because in this case the buyer is the final user, sales tax is calculated on the purchase.
- April 11:** The balance due is the original \$15,000 less the \$5,000 return. The discount therefore applies to \$10,000.
- April 13:** The discount does not apply to the shipping charges. The cash due is \$200 shipping charges plus ( $\$9,000 \times .99$ ) for a total of \$9,110.
- April 15:** The amount to pay after the chain discount is calculated as  $\$20,000 \times 95 \times .9 = \$17,100$ .
- April 15:** Because the \$3,920 cash payment was made within the discount period, the \$3,920 is considered to be a net amount after the discount has been applied. The related amount of the payable to which the discount is applied is:  $\$3,920 / .98 = \$4,000$ .
- April 19:** This is another taxable sale because the buyer company is the final user of the supplies.
- April 23:** Terms are FOB destination, and there is no indication that goods have arrived yet, so title has not transferred and therefore no sale should be recorded.
- April 30:** This is a payment on part of the *invoice price* so the discount is calculated on the \$5,500.
- April 31:** a. The balance due is \$5,000 minus \$4,000 Accounts Payable reduction from the April 15 payment. b. 5% sales tax on \$120 is \$6. \$120 is 24% of the purchase, so this also applies to the cost.

## LG 22-7.

a.

Date	Account	Post. Ref.	Dr.	Cr.
March 2	Accounts Receivable		5,200	
	Sales			5,200
2	Cost of Goods Sold		3,380	
	Merchandise Inventory			3,380
5	Accounts Receivable		7,000	
	Sales			7,000
5	Cost of Goods Sold		4,550	
	Merchandise Inventory			4,550
8	Sales Returns and Allowances		900	
	Accounts Receivable			900
8	Merchandise Inventory		585	
	Cost of Goods Sold			585

## SOLUTIONS

## Learning Goal 22, continued

## LG 22-7, continued

Date	Account	Post. Ref.	Dr.	Cr.
March 11	Accounts Receivable		4,150	
	Sales			4,000
	Cash			150
	Cost of Goods Sold		2,600	
	Merchandise Inventory			2,600
12	Cash		2,940	
	Sales Discounts		60	
	Accounts Receivable			3,000
15	Cash		5,880	
	Sales Discounts		120	
	Accounts Receivable			6,000
17	Accounts Receivable		15,000	
	Sales			15,000
17	Cost of Goods Sold		9,750	
	Merchandise Inventory			9,750
17	Freight-out Expense		350	
	Cash			350
21	Cash		4,070	
	Sales Discounts		80	
	Accounts Receivable			4,150
26	Sales Returns and Allowances		1,000	
	Accounts Receivable			1,000
31	Cash		14,000	
	Accounts Receivable			14,000
31	Cash		1,000	
	Accounts Receivable			1,000

## SOLUTIONS

## Learning Goal 22, continued

## LG 22-7, continued

Comments:

**March 15:** This is a cash receipt within the discount period, so it is considered to be net of the discount—in other words, after a discount has been applied to a larger amount of the Accounts Receivable. This amount is calculated:  $\$5,880/.98 = \$6,000$ .

**March 24:** This sale is FOB *destination*, and there is no indication that the merchandise has arrived. Therefore, no sale can be recorded because ownership has not yet transferred to the buyer.

**March 26:** Notice that with an allowance, there is no return of inventory.

b. A T account for Accounts Payable for Brooklyn Enterprises would look like this:

Accounts Payable	
	5,200
900	
3,000	
	1,300

The \$2,940 cash payment resulted in a \$3,000 debit to Accounts Payable because the payment was made within the discount period. This means that the \$2,940 is 98% of the part of the invoice amount that is being paid. The part of the invoice amount that is being paid is calculated as:  $\$2,940/.98 = \$3,000$ .

## LG 22-8.

a.

Date	Account	Post. Ref.	Dr.	Cr.
October 1	Inventory		12,500	
	Accounts Payable			12,500
2	Inventory		10,350	
	Accounts Payable			10,350
5	Accounts Payable		1,500	
	Inventory			1,500
6	Cash		6,264	
	Sales			5,800
	Sales Tax Payable			464

## SOLUTIONS

## Learning Goal 22, continued

LG 22-8, *continued*

Date	Account	Post. Ref.	Dr.	Cr.
October 6	Cost of Goods Sold		3,800	
	Inventory			3,800
8	Inventory		15,000	
	Accounts Payable			15,000
9	Cash		4,320	
	Sales			4,000
	Sales Tax Payable			320
9	Cost of Goods Sold		2,500	
	Inventory			2,500
11	Accounts Payable		11,000	
	Inventory			220
	Cash			10,780
12	Accounts Payable		10,350	
	Inventory			100
	Cash			10,250
15	Inventory		11,000	
	Accounts Payable			11,000
17	Cash		5,400	
	Sales			5,000
	Sales Tax Payable			400
17	Cost of Goods Sold		3,250	
	Inventory			3,250
18	Sales Returns and Allowances		300	
	Sales Tax Payable		24	
	Cash			324

## SOLUTIONS

## Learning Goal 22, continued

## LG 22-8, continued

Date	Account	Post. Ref.	Dr.	Cr.
October 18	Inventory		170	
	Cost of Goods Sold			170
19	Accounts Payable		3,500	
	Inventory			70
	Cash			3,430
19	Inventory		150	
	Cash			150
21	Cash		10,800	
	Sales			10,000
	Sales Tax Payable			800
21	Cost of Goods Sold		6,500	
	Inventory			6,500
23	Accounts Payable		7,000	
	Inventory			140
	Cash			6,860
30	Accounts Payable		4,000	
	Cash			4,000
30	Accounts Payable		11,500	
	Cash			11,500
31	Sales Tax Payable		1,960	
	Cash			1,960

*Comments:*

**October 19:** The cash payment is within the discount period, so the cash paid is considered to be an amount after the discount of 2% has been applied. Therefore, the gross amount of the payable (the invoice amount) for this payment is:  $\$3,430 \div .98 = \$3,500$ .

**October 23:** This is a \$7,000 payment on the *invoice amount*, so the amount of the cash to be paid will be 98% of this:  $\$7,000 \times .98 = \$6,860$ .

**October 29:** This purchase is FOB *destination*, and there is no indication that the goods have arrived. Therefore, title has not transferred to the buyer under the shipping terms, and no purchase can be recorded.

## SOLUTIONS

## Learning Goal 22, continued

LG 22-8, *continued*

**October 30:** The discount period has expired for both payments on October 30.

**October 31:** Determine the total sales tax liability by using a T account. Be sure to debit the liability for the sales tax on the returned merchandise on October 18.

- b. You need to determine the net combined sales and sales tax. Total sales plus sales tax in one account is \$26,784. Next, determine the combined amount of the return. This is the \$324 on October 18. Subtract the \$324 to determine the combined net sales and sales tax:  $\$26,784 - \$324 = \$26,460$ . This is 108% of the actual sales:  $\$26,460/1.08 = \$24,500$ . The sales tax liability is  $\$26,460 - \$24,500 = \$1,960$ .

**LG 22-9.** The quick way to approximate an annual rate for the discount is to multiply the % discount rate times the number of discount periods in a year, using 360 days for a year. For the first situation:  $360/20 = 18$  periods  $\times 2\% = 36\%$  annual rate. For the second situation:  $360/35 = 10.3$  periods  $\times 1\% = 10.3\%$  annual rate. For the 2/10, n/30 situation, the 12% rate on the loan is less than 36%, so it would make sense to borrow the money to take advantage of the discount. Janet was correct.

In the second situation, it would not be advantageous to borrow at 12% because the cost of the loan at 12% is greater than the 10.3% annual discount rate. Dave would be correct in this situation. However, if the company did not have to borrow money to take the discount, the savings would be about 10.3% annual rate.

An alternate and more accurate method of calculation is as follows:

a.

**Step 1:** Cost of merchandise if discount is taken:  $\$10,000 \times .98 = \$ 9,800$

**Step 2:** Cost of merchandise if discount not taken:  $\frac{\$10,000}{}$

Difference: Additional cost of not taking the discount:  $\$ 200$

\$200 as a percentage of what would have been the cost is  $\$200/\$9,800 = .02041$  cost increase (2.041%).

The 2.041% cost increase is what is given up to delay payment by 20 days. Therefore, the 2.041% is not an annual rate of interest; it is only a 20-day rate of interest. To convert to annual percentage rate:  $2.041 \times (365/20) = 37.248\%$ . It is much cheaper to borrow the money to pay early, take the discount, and pay only a 12% annual interest rate to the bank.

b.

**Step 1:** Cost of merchandise if discount is taken:  $\$10,000 \times .99 = \$ 9,900$

**Step 2:** Cost of merchandise if discount not taken:  $\frac{\$10,000}{}$

Difference: Additional cost of not taking the discount:  $\$ 100$

\$100 as a percentage of what would have been the cost is  $\$100/\$9,900 = .0101$  cost increase (1.01%).

The 1.01% cost increase is what is given up to delay payment by 35 days. Therefore, the 1.01% is not an annual rate of interest; it is only a 35-day rate of interest. To convert to annual percentage rate:  $1.01\% \times (365/35) = 10.53\%$ .