

Unit 2 – INVENTORY – Major Assignment – Answer Set

1. Early in 1994, Future Shop began carrying Quickbooks software, a new accounting program. On December 31, 1994 Future Shop's records showed the following cost layers in inventory:

	Units	Unit Cost	Total Cost
Opening Inventory	10	\$600	\$6,000
March 31 Purchase	14	\$650	\$9,100
August 1 Purchase	6	\$500	\$3,000

A total of 22 units were sold: 7 units were sold on February 1, and 15 were sold on May 1.

- a) Complete the following chart showing your calculations and clearly marking your answer:

(Application - 18 marks – 2 marks for COGS; 1 mark for inventory)

	LIFO	FIFO	Average Cost
PERPETUAL	Cost of Goods Sold = (7 X \$600) + (14 X \$650) + (1 X \$600) = \$13,900	Cost of Goods Sold = (7 X \$600) + (3 X \$600) + 12 X \$650) = \$13,800	Cost of Goods Sold = (7 X \$600) + (15 X (3X\$600+\$9100)/17) = \$13,817.65
	Ending Inventory GAFS = \$6,000 + \$9,100 + \$3,000 = \$18,100 EI = GAFS – COGS = \$18,100 - \$13,900 = \$4,200	Ending Inventory = \$18,100 - \$13,800 = \$4,300	Ending Inventory = \$18,100 - \$13,817.65 = \$4,282.35
PERIODIC	Cost of Goods Sold = (6 X \$500) + (14 X \$650) + (2 X \$500) = \$13,100	Cost of Goods Sold = (7 X \$600) + (3 X \$600) + 12 X \$650) = \$13,800	Cost of Goods Sold = 22 X (\$18,100/30) = \$13,273.33
	Ending Inventory = \$18,100 - \$13,100 = \$5,000	Ending Inventory = \$18,100 - \$13,800 = \$4,300	Ending Inventory = \$18,100 = \$13,273.33 = \$4,826.67

For parts b) and c), the amount, \$1100, is considered “material” in dollar amount.

- b) Future Shop takes a physical count of inventory and finds only 6 units on hand. Prepare the journal entry to record the shrinkage loss assuming that Future Shop uses (i) LIFO and (ii) FIFO.

(Application - 5 marks – 1 mark for each unique account and amount)

GENERAL JOURNAL			
Date	Account Titles and Explanation	Debit	Credit
Dec. 31	Shrinkage Expense	\$1,200	
	Inventory		\$1,200
	(2 items @ LIFO = 2 X \$600)		

- c) (To answer this question, assume that part b) never happened.) On December 31, the 8 remaining units could be replaced at the current market price of \$250 each. Prepare a journal entry if needed. Use FIFO (if needed).
(Application – 3 marks – 1 mark for each account and amount)

GENERAL JOURNAL			
Date	Account Titles and Explanation	Debit	Credit
Dec. 31	COGS Expense	\$1,000	
	Inventory		\$1,000
	(2 items @ FIFO = 2 X \$500)		

2. You are the bookkeeper at Fun Buy Souvenir Shop in Toronto, Ontario. It is January 6 and you are double checking these 4 year-end inventory situations that were brought to your attention. The physical count of inventory on December 31 was valued at \$46,000.

(1) Merchandise costing \$1000 was shipped to Fun Buy by a supplier on December 30 and was not received until January 5, a week later. The supplier's invoice showed that the terms were n/30, FOB shipping point (origin).

(2) Merchandise costing \$3000 was shipped to a regular customer in the late afternoon on December 31 after the physical count of inventory taken. The invoice was sent showing terms 2/10, n/30, FOB origin.

(3) On December 31, Triple B Souvenir Shop in Ottawa, Ontario had \$4,000 of merchandise being sold on consignment and was not included in the physical count.

(4) Merchandise costing \$2000 was shipped to Fun Buy on December 29 and arrived on January 4. The terms were n/30, FOB destination.

- a) What should the ending inventory be?
(Application – 4 marks – 1 mark for the correct treatment of each situation)

(1)	We own this and it wasn't counted	Add \$1000
(2)	We do not own this and it was counted	Less \$3000
(3)	We own this and it wasn't counted	Add \$4000
(4)	We do not own this and it wasn't counted	--do nothing--

$$EI = \$46,000 + \$1,000 - \$3,000 + \$4,000 = \$48,000$$

- b) If the inventory value had not been adjusted for the 4 situations, what would the effect (over-stated, under-stated, no effect) have been on: Revenue, COGS Expense, Gross Margin, Net Income, Total Assets?

(Thinking – 5 marks – 1 mark for each)

Revenue	No change	EI doesn't affect Revenue
COGS Expense	Too high	EI (subtracted) would have been too low
Gross Margin	Too low	Because COGS would have been too high
Net Income	Too low	Because Gross Margin would have been too low
Total Assets	Too low	Inventory was \$46,000 and should have been \$48,000

- c) Explain how inventory errors are self-correcting over two years.

(Communication – 4 marks)

If ending inventory is \$2000 too low at the end of one year, COGS is \$2000 too high, Gross Margin is \$2000 too low, and Net Income is \$2000 too low. The opening inventory of the next year will be \$2000 too low because it is the ending inventory of the previous year. If closing inventory is correct, COGS will be too \$2000 low, Gross Margin \$2000 too high, Net Income \$2000 too high. Over 2 years, the amounts that were overstated in the first year are equally understated in the second year so the net effect is zero. This chart summarizes:

	Year 1	Year 2	Year 1 + Year 2
Opening Inventory	√	Too low by \$2000	
Closing Inventory	Too low by \$2000	√	
COGS	Too high by \$2000	Too low by \$2000	Net effect = \$0
Gross Margin	Too low by \$2000	Too high by \$2000	Net effect = \$0
Net Income	Too low by \$2000	Too high by \$2000	Net effect = \$0

*There are many ways to clearly explain the self-correction. An explanation that logically follows and is correct will score full marks.

3. Draw a pictorial representation of 1 item of inventory being (1) bought, (2) stored and (3) sold. Below (1) and (3), show the journal entry (no dollar amounts) for the item, using:

- a. Perpetual Method

(Knowledge – 3 marks – ½ mark for each account)

- b. Periodic Method

(Knowledge – 2 marks – ½ mark for each account)

- c. Drawing

(Communication – 1 mark)

The student may find the following chart helpful.

	Bought	Stored	Sold
Picture			

Perpetual Method	Inventory Bank / Cash		COGS Expense (cost price) Inventory Sales (retail price) Cash / Bank / A/R
Periodic Method	Purchases Bank / Cash		Sales (retail price) Cash / Bank / A/R

4. During the current year, Cherry Vanilla Co. offered for sale merchandise that had a total cost of \$348,000 and retail value of \$660,000. The store's net sales for the year were \$580,000. For each calculation below, show all your work.

- a) Calculate the Cost Ratio
(Application – 1 mark)

$$\text{Cost Ratio} = \text{COGS} / \text{Sales (COGS is unavailable – use GAFS)} \\ = \$348 / \$580 = 60\%$$

- b) Estimate the (i) Cost of goods sold during the year, and, (ii) the ending inventory at the end of the year.
(Thinking – 4 marks – 2 marks for each calculation)

$$\text{COGS} = \text{Sales} \times \text{Cost Ratio} = \$580,000 \times 60\% = \$348,000 \\ \text{EI} = \text{GAFS} - \text{COGS} = \$396,000 - \$348,000 = \$48,000$$

- c) Express the Cost Ratio as a mark-up percentage.
(Application – 1 mark)

$$\text{Mark-up percentage} = \text{mark-up (\$)} / \text{COGS} \\ \text{Mark-up dollars} = \text{Sales} - \text{COGS} = \$580,000 - \$348,000 = \$232,000 \\ \text{Mark-up percentage} = \$232 / \$348 = 66.7\%$$

- d) A physical count of inventory at year-end had a retail value of \$75,500. Calculate the shrinkage of inventory at its cost value.
(Thinking – 3 marks)

$$\text{EI (cost)} = \text{retail value} \times \text{Cost Ratio} = \$75,500 \times 60\% = \$45,300 \\ \text{Shrinkage} = \text{calculated value} - \text{physical count} = \$48,000 - \$45,300 = \$2,700$$

- e) Calculate the Gross Margin (include shrinkage losses in Cost of Goods Sold)
(Thinking – 3 marks)

$$\text{Gross Margin} = \text{Sales} - \text{COGS} = \$580,000 - (\$348,000 + \$2,700) = \$229,300$$

5. James Brown is an auditor with Revenue Canada. He has been assigned to audit the income tax return of Square Deal Lumber Company (SDLC). Selected figures from the company's income tax return are below:

Sales	\$12,000,000
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Beginning Inventory	\$360,000
Purchases of Merchandise	\$9,600,000
Ending Inventory	\$260,000
Cost of Goods Sold	\$9,700,000
Gross Profit	\$2,300,000

As Brown examined these figures, he became suspicious that Square Deal had understated its taxable income by a significant amount and may be been engaging in this practice for several years.

Brown looked up several ratios for the retail lumber industry in a recent publication of industry averages. He found that retail lumberyards, on average, had annual sales of \$10 million, an inventory turnover rate of 10, and a gross profit rate of 20%. Brown also noticed a newspaper advertisement by Square Deal, which read, "Many unique products in our huge yard. We carry what the other yards don't. this week's special: roofing materials – 15% discount on shake, shingles, and shale. Large selection in stock." Brown then sent a letter to Square Deal to arrange a date for visiting the company and performing an audit of its latest income tax return.

When Brown arrived at Square Deal Lumber, he was met in the parking lot by Sam "Square Deal" Delano, president and owner of the business. Brown noticed that Square Deal looked like most other retail lumberyards. There was one main building, containing offices and displays of such merchandise as power tools and electrical supplies. Behind this building was a large fenced yard, with many stacks of lumber, and several storage sheds. These sheds contained plywood, fiberglass insulation, and other products that required protection from the weather.

Brown asked to see the company's perpetual inventory records. Delano told him that Square Deal uses a periodic inventory system, as it is not a publicly owned company and does not have to issue quarterly financial statements to shareholders or other outsiders. He pointed out that he and the general manager were on hand every day, and they both knew exactly what was in stock – down to the very last board.

By examining various accounting records, Brown concluded that the amounts of sales revenues and merchandise purchases were correctly stated in Square Deal's income tax return. He noticed, however, that most types of merchandise were reordered at intervals of about five weeks.

NOTE: An inventory turnover rate of 10 means that inventory has, on average, sold 10 times per year, or every 36.5 days (365 days / 10 times); that is, every 5 weeks. The turnover rate is calculated with the following formula: $\text{COGS} / \text{Inventory}$

- a) What was it about the figures in SDLC's income tax return that originally made Brown suspect that the company might be understating its taxable income?
(Thinking – 2 marks)

The ending inventory is much too low. If inventory turned over 12 times a year, then there would be one month in inventory at all times (12 months per year), but it turns over 10 times a year so they should have just over \$1M in inventory at all times.

- b) What happened to confirm Brown's suspicions? Identify all of the factors that have come to his attention and yours.

(Thinking – 2 marks)

When Brown looked around the lumberyard, there was a tremendous amount of inventory. The newspaper ad boasted the same. They ordered inventory every 5 weeks which is the same as ordering 10 times a year (which is the turnover rate).

- c) Does it appear that SDLC is engaging in a deliberate scheme to evade income taxes, or that the company has simply made an "honest mistake"? Explain.

(Thinking – 2 marks)

It appears that the deception is deliberate. The owner states that he knows what he has in inventory down to the very last board. He and the manager would both be very aware that the value of the inventory in the yard is worth more than the \$260,000 on the books.

- d) Assume that the industry averages correctly approximate the financial position and operating results of Square Deal. Estimate for the current year the correct amounts of the company's cost of goods sold and average amount of inventory. (Show your calculations.)

(Thinking – 2 marks)

Solve for Ending and Opening Inventory. The formula, $OI + P = GAFS = EI + COGS$, isn't helpful because 2 variables are unknown. Therefore, use the turnover rate of 10.

$$10 = COGS / Inventory = \$9,700,000 / Inventory$$
$$Inventory = \$9,700,000 / 10 = \$970,000$$

- e) Estimate the amount by which Square Deal appears to have understated its taxable income.

(Thinking – 2 marks)

If Ending Inventory should have been \$970,000 rather than \$260,000. COGS is overstated by \$710,000, Gross Margin is understated by the same amount, and Net Income is understated by \$710,000. Over time, this company has evaded taxes on \$710,000.

6. Using the following amounts, prepare a merchandiser's Income Statement for the year-ended December 31.

(Application – 6 marks)

XYZ Company
Income Statement
31-Dec-17

<u>Revenue</u>			
	Sales		
Cost of Goods Sold			
	Opening Inventory		\$13,000
	Add: Purchases	\$125,000	
	Less: Purchases Returns and Allowances	\$4,000	\$121,000
	Freight-in		\$300
	Goods Available for Sale		\$134,300
	Less: Ending Inventory		\$15,000
Gross Margin			
<u>Expenses</u>			
	Automobile		\$3,000
	Building Maintenance		\$2,000
	Office Expense		\$1,000
	Salaries		\$50,000
	Utilities		\$4,700
NET INCOME			