

**Solution:**

(1)

Let us tabulate all the transaction using LIFO, FIFO and weighted average method.

The table will look like as follows:

Date	Sales Done	Final Inventory Value Under		
		FIFO	LIFO	Average Method
31 Dec 2017	0	110 @ \$50	110 @ \$50	110 @ \$50
10 Feb 2018	0	110 @ \$50 80 @ \$60	110 @ \$50 80 @ \$60	110 @ \$50 80 @ \$60 = 190 @ \$54.21
14 Apr 2018	5,400	50 @ \$50 80 @ \$60	110 @ \$50 20 @ \$60	130 @ \$54.21
9 May 2018	0	50 @ \$50 80 @ \$60 120 @ \$70	110 @ \$50 20 @ \$60 120 @ \$70	130 @ \$54.21 120 @ \$70.00 = 250 @ \$61.79
14 July 2018	12,000	10 @ \$60 120 @ \$70	110 @ \$50 20 @ \$60	130 @ \$61.79
21 Oct 2018	0	10 @ \$60 120 @ \$70 100 @ \$80	110 @ \$50 20 @ \$60 100 @ \$80	130 @ \$61.79 100 @ \$80 = 230 @ \$69.70
12 Nov 2018	8,800	50 @ \$70 100 @ \$80	110 @ \$50 20 @ \$60 20 @ \$80	150 @ \$69.70
Total at the end	26,200	11,500	7,300	10,456

The table gives us the final inventory values. We can use them to calculate gross profits as follows:

$$\text{Gross Profit} = \text{Sales} - \text{Purchases}$$

$$= \text{Sales} - (\text{Gross Purchase} + \text{Beginning Inventory} - \text{End Inventory})$$

So, we get

$$\text{Gross Profit} = 26,200 - (21,200 + 5,500 - \text{End Inventory}) = \text{End Inventory} - 500$$

Thus, we get

$$\text{Gross Profit (FIFO)} = 11,000$$

$$\text{Gross Profit (LIFO)} = 6,800$$

$$\text{Gross Profit (Avg.)} = 9,956$$

(2)

The difference would be given by:

$$\text{Difference} = \text{Difference in income} \times \text{Tax rate} = 4,200 \times 0.4 = 1,680$$

Thus, the contractors could have saved almost \$1,680 if they has used LIFO instead of FIFO for stating income.