

## P4-22 FIFO Method

$$\text{Beg Inv. WIP} + \text{Units Started} = \text{Units transf.} + \text{End. Inv WIP}$$

Units:

$$60,000 + 510,000 = \boxed{500,000} + 70,000$$

Step 1:

Costs:

60% Mat = \$27,000	Mat = \$468,000	Mat → 80%
30% Conv = \$13,000	Conv = \$357,000	Conv → 40%
\$40,000	\$825,000	

Step 2: Cal EU of production ⇒

$$\begin{aligned}\text{Mat} &= \overbrace{500,000}^{\text{same as WA}} + \overbrace{(70,000 \times .8)}^{\text{less beg. inv.}} - \overbrace{(60,000 \times .6)}^{\text{less beg. inv.}} \\ &= 520,000 \\ \text{Conv} &= \overbrace{500,000}^{\text{same as WA}} + \overbrace{(70,000 \times .4)}^{\text{less beg. inv.}} - \overbrace{(60,000 \times .3)}^{\text{less beg. inv.}} \\ &= 510,000\end{aligned}$$

Step 3: Cal. Cost / EU ⇒ because (L) = (R) we can use the costs from the (L) side & the units we just cal. on the (R) side. But the EU we just cal. don't include the beg inv. units & therefore the cost figure we need to use also won't include the beg. inv.

$$\begin{aligned}\text{Mat} &= \frac{468,000}{520,000} = \$0.9/\text{EU} \\ \text{Conv} &= \frac{357,000}{510,000} = \$0.7/\text{EU}\end{aligned} \quad \left. \begin{array}{l} \\ \end{array} \right\} \text{total cost/EU} = \$1.6$$

Step 4: Cal cost of ending inv. (WIP):

$$\text{Mat} = 70,000 \times .8 \times .9 = \$50,400$$

$$\text{Conv} = 70,000 \times .4 \times .7 = \$19,600$$

$$\underline{\$70,000} \quad \text{total cost of ending WIP}$$

Step 5: Cal cost of units transferred: (500,000 units transferred)

\* Because we are using FIFO, the 1<sup>st</sup> units to be transferred out are the ones in Beg. WIP, therefore we need to calculate the costs of these units 1<sup>st</sup> and then the costs of the rest of the units.

	<u>Mat</u>	<u>Conv</u>	<u>Total</u>
Costs in beg. WIP	27,000	13,000	40,000
Costs to complete the units in beg. WIP			
Mat = $60,000 \times (1 - .6) \times .9$	21,600		
Conv = $60,000 \times (1 - .3) \times .7$		29,400	
			> 51,000
Costs of units started & completed (the rest of the units transferred)			
$(500,000 - 60,000) \times 1.6$			704,000
Total Cost of units transferred			<u>795,000</u>

Step 6: Reconciliation  $\Rightarrow$  (L) costs = (R) costs

Beg Inv + Units Started = Units transferred + End. Inv.

$$\underbrace{\$40,000 + \$825,000}_{\$865,000} = \underbrace{\$795,000 + \$70,000}_{\$865,000}$$