

17-24 Weighted-average method, assigning costs..**SOLUTION EXHIBIT 17-24A**

Summarize the Flow of Physical Units and Compute Output in Equivalent Units; Weighted-Average Method of Process Costing, Tomlinson Corporation for July 2014.

Flow of Production	(Step 1) Physical Units	(Step 2) Equivalent Units	
		Direct Materials	Conversion Costs
Work in process, beginning (given)	8,700		
Started during current period (given)	<u>34,500</u>		
To account for	<u>43,200</u>		
Completed and transferred out during current period	32,000	32,000	32,000
Work in process, ending* (given)	11,200		
11,200 × 100%; 11,200 × 70%		11,200	7,840
Accounted for	<u>43,200</u>	<u>43,200</u>	<u>39,840</u>
Equivalent units of work done to date			

*Degree of completion: direct materials, 100%; conversion costs, 70%.

SOLUTION EXHIBIT 17-24B

Summarize the Total Costs to Account for, Compute the Cost per Equivalent Unit, and Assign Costs to the Units Completed and Units in Ending Work-in-Process Inventory; Weighted-Average Method of Process Costing for Tomlinson Corporation for July 2014.

	Total Production Costs	Direct Materials	Conversion Costs
(Step 3) Work in process, beginning (given)	\$104,700	\$ 61,500	\$ 43,200
Costs added in current period (given)	<u>800,004</u>	<u>301,380</u>	<u>498,624</u>
Total costs to account for	<u>\$904,704</u>	<u>\$362,880</u>	<u>\$541,824</u>
(Step 4) Costs incurred to date		\$362,880	\$541,824
Divide by equivalent units of work done to date (Solution Exhibit 17-24A)		<u>÷43,200</u>	<u>÷39,840</u>
Cost per equivalent unit of work done to date		<u>\$ 8.40</u>	<u>\$ 13.60</u>
(Step 5) Assignment of costs:			
Completed and transferred out (32,000 units)	\$704,000	(32,000* × \$8.40) + (32,000* × \$13.60)	
Work in process, ending (11,200 units)	<u>200,704</u>	<u>(11,200† × \$8.40) + (7,840† × \$13.60)</u>	
Total costs accounted for	<u>\$904,704</u>	<u>\$362,880+</u>	<u>\$541,824</u>

*Equivalent units completed and transferred out (given).

†Equivalent units in ending work in process (given).

17-25 FIFO method, assigning costs.

1. Solution Exhibit 17-25A calculates the equivalent units of work done in the current period. Solution Exhibit 17-25B summarizes total costs to account for, calculates the cost per equivalent unit of work done in the current period for direct materials and conversion costs, and assigns these costs to units completed and transferred out and to units in ending work-in-process inventory.

SOLUTION EXHIBIT 17-25A

Summarize the Flow of Physical Units and Compute Output in Equivalent Units; FIFO Method of Process Costing, Tomlinson Corporation for July 2014.

Flow of Production	(Step 1) Physical Units	(Step 2) Equivalent Units	
		Direct Materials	Conversion Costs
Work in process, beginning (given)	8,700	(work done before current	
Started during current period (given)	34,500	period)	
To account for	<u>43,200</u>		
Completed and transferred out during current period:			
From beginning work in process [§]			
8,700 × (100% – 100%); 8,700 × (100% – 25%)	8,700	0	6,525
Started and completed			
23,300 × 100%, 23,300 × 100%	23,300 [†]	23,300	23,300
Work in process, ending* (given)			
11,200 × 100%; 11,200 × 70%	<u>11,200</u>	11,200	7,840
Accounted for	<u>43,200</u>		
Equivalent units of work done in current period		<u>34,500</u>	<u>37,665</u>

[§]Degree of completion in this department: direct materials, 100%; conversion costs, 25%.

[†]32,000 physical units completed and transferred out minus 8,700 physical units completed and transferred out from beginning work-in-process inventory.

*Degree of completion in this department: direct materials, 100%; conversion costs, 70%.

SOLUTION EXHIBIT 17-25B

Summarize the Total Costs to Account for, Compute the Cost per Equivalent Unit, and Assign Costs to the Units Completed and Units in Ending Work-in-Process Inventory; FIFO Method of Process Costing, Tomlinson Corporation for July 2014.

	Total Production Costs	Direct Materials	Conversion Costs
(Step 3) Work in process, beginning (given)	\$104,700	\$ 61,500	\$ 43,200
Costs added in current period (given)	<u>800,004</u>	<u>301,380</u>	<u>498,624</u>
Total costs to account for	<u>\$904,704</u>	<u>\$362,880</u>	<u>\$541,824</u>
(Step 4) Costs added in current period		\$301,380	\$498,624
Divide by equivalent units of work done in current period (Solution Exhibit 17-25A)		<u>÷34,500</u>	<u>÷37,665</u>
Cost per equivalent unit of work done in current period		<u>\$ 8.74</u>	<u>\$ 13.24</u>
(Step 5) Assignment of costs:			
Completed and transferred out (33,000 units):			
Work in process, beginning (8,500 units)	\$104,700	\$61,500	+ \$43,200
Cost added to beginning work in process in current period	<u>86,381</u>	(0* × \$8.74)	+ (6,525* × \$13.24)
Total from beginning inventory	191,081		
Started and completed (24,500 units)	<u>511,995</u>	(23,300† × \$8.74) + (23,300† × \$13.24)	
Total costs of units completed and transferred out	703,076		
Work in process, ending (10,500 units)	<u>201,628</u>	(11,200# × \$8.74) + (7,840# × \$13.24)	
Total costs accounted for	<u>\$904,704</u>	<u>\$362,880</u>	<u>+\$541,824</u>

*Equivalent units used to complete beginning work in process from Solution Exhibit 17-25A, Step 2.

†Equivalent units started and completed from Solution Exhibit 17-25A, Step 2.

#Equivalent units in ending work in process from Solution Exhibit 17-25A, Step 2.

2. Using the weighted average method will result in a greater degree of cost smoothing because the cost of beginning inventory is mixed together with costs added each period. This will produce a more consistent cost per equivalent unit than the FIFO method.

In the case of Tomlinson Corporation, note that the direct material cost per equivalent unit went from \$7.07 in the prior period ($\$61,500 \div 8,700$ units) to \$8.74 in July, while the conversion cost per equivalent unit decreased from \$19.86 ($\$43,200 \div 2,175$ equivalent units in opening work-in-process) to \$13.24 in July. Under the weighted-average method, these costs and equivalent units are combined into consistent, blended rates of \$8.40 and \$13.60 for direct materials and conversion costs, respectively.

17-26 Transferred-in costs, weighted-average method.**SOLUTION EXHIBIT 17-26A**

Summarize the Flow of Physical Units and Compute Output in Equivalent Units; Weighted-Average Method of Process Costing, Finishing Department of Trendy Clothing for June 2014.

Flow of Production	(Step 1)	(Step 2)		
	Physical Units	Equivalent Units		
		Transferred-in Costs	Direct Materials	Conversion Costs
Work in process, beginning (given)	60			
Transferred in during current period (given)	<u>100</u>			
To account for	<u>160</u>			
Completed and transferred out during current period	120	120	120	120
Work in process, ending* (given)	40			
40 × 100%; 40 × 0%; 40 × 75%		40	0	30
Accounted for	<u>160</u>			
Equivalent units of work done to date		<u>160</u>	<u>120</u>	<u>150</u>

*Degree of completion in this department: transferred-in costs, 100%; direct materials, 0%; conversion costs, 75%.

SOLUTION EXHIBIT 17-26B

Summarize the Total Costs to Account for, Compute the Cost per Equivalent Unit, and Assign Costs to the Units Completed and Units in Ending Work-in-Process Inventory; Weighted-Average Method of Process Costing, Finishing Department of Trendy Clothing for June 2014.

	Total Production Costs	Transferred-in Costs	Direct Materials	Conversion Costs
(Step 3) Work in process, beginning (given)	\$84,000	\$ 60,000	\$ 0	\$24,000
Costs added in current period (given)	<u>206,400</u>	<u>117,000</u>	<u>27,000</u>	<u>62,400</u>
Total costs to account for	<u>\$290,400</u>	<u>\$ 177,000</u>	<u>\$27,000</u>	<u>\$86,400</u>
(Step 4) Costs incurred to date		\$ 117,000	\$27,000	\$86,400
Divide by equivalent units of work done to date (Solution Exhibit 17-26A)		<u>÷ 160</u>	<u>÷ 120</u>	<u>÷ 150</u>
Cost per equivalent unit of work done to date		<u>\$1,106.25</u>	<u>\$ 225</u>	<u>\$576</u>
(Step 5) Assignment of costs:				
Completed and transferred out (120 units)	\$228,870	(120 ^a × \$1,106.25) + (120 ^a × \$225) + (120 ^a × \$576)		
Work in process, ending (40 units):	<u>61,530</u>	<u>(40^b × \$1,106.25) + (0^b × \$225) + (30^b × \$576)</u>		
Total costs accounted for	<u>\$290,400</u>	<u>\$ 177,000 + \$27,000 + \$86,400</u>		

^a Equivalent units completed and transferred out from Sol. Exhibit 17-26A, step 2.

^b Equivalent units in ending work in process from Sol. Exhibit 17-26A, step 2.

17-27 Transferred-in costs, FIFO method.

Solution Exhibit 17-27A calculates the equivalent units of work done in the current period (for transferred-in costs, direct-materials, and conversion costs) to complete beginning work-in-process inventory, to start and complete new units, and to produce ending work in process. Solution Exhibit 17-27B summarizes total costs to account for, calculates the cost per equivalent unit of work done in the current period for transferred-in costs, direct materials, and conversion costs, and assigns these costs to units completed and transferred out and to units in ending work-in-process inventory.

SOLUTION EXHIBIT 17-27A

Summarize the Flow of Physical Units and Compute Output in Equivalent Units; FIFO Method of Process Costing, Finishing Department of Trendy Clothing for June 2014.

Flow of Production	(Step 1)	(Step 2)		
	Physical Units	Equivalent Units		
	Transferred-in Costs	Direct Materials	Conversion Costs	
Work in process, beginning (given)	60	(work done before current period)		
Transferred-in during current period (given)	<u>100</u>			
To account for	<u>160</u>			
Completed and transferred out during current period:				
From beginning work in process ^a	60			
[60 × (100% – 100%); 60 × (100% – 0%); 60 × (100% – 50%)]		0	60	30
Started and completed	60 ^b			
(60 × 100%; 60 × 100%; 60 × 100%)		60	60	60
Work in process, ending ^c (given)	40			
(40 × 100%; 40 × 0%; 40 × 75%)		40	0	30
Accounted for	<u>160</u>	<u>100</u>	<u>120</u>	<u>120</u>
Equivalent units of work done in current period		<u>100</u>	<u>120</u>	<u>120</u>

^aDegree of completion in this department: Transferred-in costs, 100%; direct materials, 0%; conversion costs, 50%.

^b120 physical units completed and transferred out minus 60 physical units completed and transferred out from beginning work-in-process inventory.

^cDegree of completion in this department: transferred-in costs, 100%; direct materials, 0%; conversion costs, 75%.

SOLUTION EXHIBIT 17-27B

Summarize the Total Costs to Account for, Compute the Cost per Equivalent Unit, and Assign Costs to the Units Completed and Units in Ending Work-in-Process Inventory; FIFO Method of Process Costing, Finishing Department of Trendy Clothing for June 2014.

	Total Production Costs	Transferred-in Costs	Direct Materials	Conversion Costs
(Step 3) Work in process, beginning (given)	\$ 69,000	\$ 45,000	\$ 0	\$ 24,000
Costs added in current period (given)	<u>203,400</u>	<u>114,000</u>	<u>27,000</u>	<u>62,400</u>
Total costs to account for	<u>\$272,400</u>	<u>\$159,000</u>	<u>\$27,000</u>	<u>\$86,400</u>
(Step 4) Costs added in current period		\$114,000	\$27,000	\$62,400
Divide by equivalent units of work done in current period (Solution Exhibit 17-27A)		$\div 100$	$\div 120$	$\div 120$
Cost per equivalent unit of work done in current period		<u>\$1,140</u>	<u>\$ 225</u>	<u>\$ 520</u>
(Step 5) Assignment of costs:				
Completed and transferred out (160 units)				
Work in process, beginning (60 units)	\$ 69,000	\$45,000	+ \$0	+ \$24,000
Costs added to beginning work in process in current period	<u>29,100</u>	(0 ^a × \$1,140)	+ (60 ^a × \$225)	+ (30 ^a × \$520)
Total from beginning inventory	98,100			
Started and completed (60 units)	<u>113,100</u>	(60 ^b × \$1,140)	+ (60 ^b × \$225)	+ (60 ^b × \$520)
Total costs of units completed and transferred out	211,200			
Work in process, ending (40 units):	<u>61,200</u>	(40 ^c × \$1,140)	+ (0 ^c × \$225)	+ (30 ^c × \$520)
Total costs accounted for	<u>\$272,400</u>	<u>\$159,000</u>	+ <u>\$27,000</u>	+ <u>\$86,400</u>

^a Equivalent units used to complete beginning work in process from Solution Exhibit 17-27A, step 2.

^b Equivalent units started and completed from Solution Exhibit 17-27A, step 2.

^c Equivalent units in ending work in process from Solution Exhibit 17-27A, step 2.

