Exercise 4-10

Weighted-Average Method

1.

	Kilograms of Cement
Work in process, May 1	80,000
Started into production during the month	300,000
Total kilograms in process	380,000
Deduct work in process, May 31	50,000
Completed and transferred out during the month	330,000

2.

	Equivalent Units (EU)	
	Materials	*Conversion*
Units transferred out	330,000	330,000
Work in process, ending:		
Materials: 50,000 kilograms × 40%	20,000	
Conversion: 50,000 kilograms × 10%		5,000
Equivalent units of production	350,000	335,000

FIFO Method

1.

	Kilograms of Cement
Work in process, May 1	80,000
Started into production during the month	300,000
Total kilograms in process	380,000
Deduct work in process, May 31	50,000
Completed and transferred out during the month	330,000

2.

	Equivalent Units	
	Materials	*Conversion*
To complete beginning work in process:		
Materials:		
80,000 kilograms × (100% − 80%)	16,000	
Conversion:		
80,000 kilograms × (100% − 20%)		64,000
Units started and completed during the month*	250,000	250,000
Ending work in process:		
Materials:		
50,000 kilograms × 40% complete	20,000	
Conversion:		
50,000 kilograms × 10% complete		5,000
Equivalent units of production	286,000	319,000

Problem 4-14 (45 minutes)

Weighted-Average Method

1. Equivalent Units of Production

	Materials	*Conversion*
Transferred to next department	450,000	450,000
Ending work in process:		
Materials: 80,000 units x 75% complete	60,000	
Conversion: 80,000 units x 25% complete		20,000
Equivalent units of production	510,000	470,000

2. Cost per Equivalent Unit

	Materials	*Conversion*
Cost of beginning work in process	$ 36,550	$ 13,500
Cost added during the period	391,850	287,300
Total cost (a)	$428,400	$300,800
Equivalent units of production (b)	510,000	470,000
Cost per equivalent unit, (a) ÷ (b)	$0.84	$0.64

3. Applying Costs to Units

	Materials	*Conversion*	*Total*
Ending work in process inventory:			
Equivalent units of production	60,000	20,000	
Cost per equivalent unit	$0.84	$0.64	
Cost of ending work in process inventory	$50,400	$12,800	$63,200
Units completed and transferred out:			
Units transferred to the next department	450,000	450,000	
Cost per equivalent unit	$0.84	$0.64	
Cost of units completed and transferred out	$378,000	$288,000	$666,000

4. Cost Reconciliation

Costs to be accounted for:	
Cost of beginning work in process inventory ($36,550 + $13,500)	$ 50,050
Costs added to production during the period ($391,850 + $287,300)	679,150
Total cost to be accounted for	$729,200
Costs accounted for as follows:	
Cost of ending work in process inventory	$ 63,200
Cost of units completed and transferred out	666,000
Total cost accounted for	$729,200

FIFO method

1. Equivalent Units of Production

	Materials	Conversion
To complete beginning work in process:		
Materials: 70,000 units x (100% − 70%)	21,000	
Conversion: 70,000 units x (100% − 40%)		42,000
Units started and completed during the period (460,000 units started − 80,000 units in ending inventory)	380,000	380,000
Ending work in process:		
Materials: 80,000 units x 75% complete	60,000	
Conversion: 80,000 units x 25% complete		20,000
Equivalent units of production	461,000	442,000

2. Cost per Equivalent Unit

	Materials	Conversion
Cost added during the period (a)	$391,850	$287,300
Equivalent units of production (b)	461,000	442,000
Cost per equivalent unit (a) ÷ (b)	$0.85	$0.65

3. See the next page.

4. Cost Reconciliation

Costs to be accounted for:	
Cost of beginning work in process inventory ($36,550 + $13,500)	$ 50,050
Costs added to production during the period ($391,850 + $287,300)	679,150
Total cost to be accounted for	$729,200
Costs accounted for as follows:	
Cost of ending work in process inventory	$ 64,000
Costs of units transferred out	665,200
Total cost accounted for	$729,200

3. Costs of Ending Work in Process Inventory and Units Transferred Out

	Materials	*Conversion*	*Total*
Ending work in process inventory:			
Equivalent units of production	60,000	20,000	
Cost per equivalent unit	$0.85	$0.65	
Cost of ending work in process inventory	$51,000	$13,000	$64,000
Units transferred out:			
Cost in beginning work in process inventory	$36,550	$13,500	$50,050
Cost to complete the units in beginning work in process inventory:			
Equivalent units of production required to complete the beginning inventory.	21,000	42,000	
Cost per equivalent unit	$0.85	$0.65	
Cost to complete the units in beginning inventory	$17,850	$27,300	$45,150
Cost of units started and completed this period:			
Units started and completed this period	380,000	380,000	
Cost per equivalent unit	$0.85	$0.65	
Cost of units started and completed this period	$323,000	$247,000	$570,000
Cost of units transferred out			$665,200