

3-38 (a) Plantwide cost driver rate

$$= \frac{\$120,000 + \$160,000}{(8,000 + 12,000) \text{ direct labor hours}}$$

$$= \frac{\$280,000}{20,000 \text{ direct labor hours}}$$

$$= \$14 \text{ per direct labor hour}$$

Job Cost Sheet: Job #714			
<u>Direct materials</u>			
Milling		\$800	
Assembly		<u>50</u>	
Total direct material cost			\$850
<u>Direct labor</u>			
Milling		\$100	
Assembly		<u>600</u>	
Total direct labor cost			700
<u>Manufacturing Support</u>			
50 Direct labor hours × \$14 per hour			<u>700</u>
Total cost			<u><u>\$2,250</u></u>

(b) Cost driver rate – Milling = $\frac{\$120,000}{12,000 \text{ machine hours}}$

$$= \$10 \text{ per machine hour}$$

Cost driver rate – Assembly = $\frac{\$160,000}{12,000 \text{ direct labor hours}}$

$$= \$13.33 \text{ per direct labor hour}$$

Job Cost Sheet: Job #714		
<u>Direct materials</u>		
Milling	\$800	
Assembly	<u>50</u>	
Total direct material cost		\$850.00
<u>Direct labor</u>		
Milling	\$100	
Assembly	<u>600</u>	
Total direct labor cost		700.00
<u>Support</u>		
Milling: 18 machine hours × \$10 per hour	\$180.00	
Assembly: 40 direct labor hours × \$13.33 per hour	<u>533.20</u>	
Total overhead cost		<u>713.20</u>
Total cost		<u>\$2,263.20</u>

(c)

	<u>Part (a)</u>	<u>Part (b)</u>
Manufacturing cost	\$2,250.00	\$2,263.20
25% markup	<u>562.50</u>	<u>565.80</u>
Bid price	<u>\$2,812.50</u>	<u>\$2,829.00</u>

- (d) The company may favor the method in (b) if support activity costs in the milling department have a cause-and-effect relationship with machine hours, while those in the assembly department have a cause-and-effect relationship with direct labor hours. In this case, the computed total manufacturing cost in part (a) is of similar magnitude to the cost in part (b), and therefore the bid prices are also of similar magnitude. Given this result, one might be inclined to use the simpler method in part (a) rather than the more accurate but more complex method in part (b). However, comparisons across different products may produce greater differences in computed costs and bid prices.

3-39 (a)

	Cutting	Grinding	Drilling	Total
Support cost	\$504,000	\$2,304,000	\$2,736,000	\$5,544,000
Direct labor hours	60,000	96,000	144,000	300,000

Plantwide cost driver rate:

$$\frac{\$5,544,000}{300,000 \text{ direct labor hours}} = \$18.48 \text{ per direct labor hour}$$

Support cost applied to Job ST101:

$$\$18.48 \times (2,000 + 2,500 + 3,000) = \$138,600.$$

(b) Cost driver rate: Cutting

$$\frac{\$504,000}{960,000} = \$0.525 \text{ per machine hour}$$

Cost driver rate: Grinding

$$\frac{\$2,304,000}{96,000 \text{ direct labor hours}} = \$24 \text{ per direct labor hour}$$

Cost driver rate: Drilling

$$\frac{\$2,736,000}{144,000 \text{ direct labor hours}} = \$19 \text{ per direct labor hour}$$

Support cost applied to Job ST101:

Dept	Rate	Units of Driver Used	Support Cost
Cutting	\$0.525	20,000 MH	\$10,500
Grinding	\$24.00	2,500 DLH	60,000
Drilling	\$19.00	3,000 DLH	<u>57,000</u>
			<u>\$127,500</u>

- (c) The company may favor departmental support cost driver rates if support activity costs in the cutting department have a cause-and-effect relationship with machine hours, while those in the grinding and drilling departments have a cause-and-effect relationship with direct labor hours. The company may use a plantwide cost driver rate because it is simpler than using

multiple departmental rates, though the departmental rate method is potentially more accurate.