

A11 Cost Accounting (I)

Chapter 25 Absorption Costing and Marginal Costing

Income Statements under absorption costing

Income statement for the month ended 31 January 2011				\$	\$
Sales					88,000
Less: Cost of goods sold					
Opening inventory				10,000	
Direct material cost				27,000	
Direct labour cost				18,000	
Variable production overheads				13,500	
Fixed production overheads				11,250	
			Total production cost \$69,750	<u>79,750</u>	
	Less: Closing inventory	[(\$69,750 / 2,250) x 250]		(7,750)	(72,000)
Gross profit					16,000
Less: Variable non-production overheads					(8,000)
Fixed non-production overheads					<u>(3,000)</u>
Net profit					<u>5,000</u>

Classwork 1

You are given the following information about CD Ltd, a manufacturer, for the years ended 31 December 2016:

Opening inventory	10,000 units	\$200,000
Sales	80,000 units	
Production	100,000 units	
Direct materials	\$5 per unit	
Direct labour	\$4 per unit	
Selling price	\$30 per unit	
Manufacturing overheads: Variable	\$10 per unit	
Fixed	\$100,000 per annum	
Non-manufacturing overheads: Variable	\$1 per unit sold	
Fixed	\$50,000 per annum	

Required: Prepare income statements for the years ended 31 December 2016 under absorption costing.

[illegible]

Income Statements under marginal costing

Income statement for the month ended 31 January 2011

		\$	\$
Sales			88,000
Less: Variable cost of goods sold			
Opening inventory		10,000	
Direct material cost		27,000	
Direct labour cost		18,000	
Variable production overheads		13,500	
	Total variable production cost	\$58,500	
	Production unit	68,500	
	Closing inventory unit	(6,500)	
	Less: Closing inventory [$\\$58,500 / 2,250 \times 250$]		62,500
Product contribution margin			26,000
Less: Variable non-production overheads			(8,000)
Contribution			18,000
Less: Fixed production overheads		11,250	
Fixed non-production overheads		3,000	14,250
Net profit			3,750

Classwork 4

You are given the following information about CD Ltd, a manufacturer, for the years ended 31 December 2016:

Opening inventory	10,000 units	\$200,000
Sales	80,000 units	
Production	100,000 units	
Direct materials	\$5 per unit	
Direct labour	\$4 per unit	
Selling price	\$30 per unit	
Manufacturing overheads: Variable	\$10 per unit	
Fixed	\$100,000 per annum	
Non-manufacturing overheads: Variable	\$1 per unit sold	
Fixed	\$50,000 per annum	

Required:

Prepare income statements for the years ended 31 December 2016 under marginal costing.

Income Statement for the year ended 31 December 2016

[illegible]

Overhead absorption rate

Actual overhead absorption rate

Actual manufacturing overhead absorption rate

= Actual total manufacturing overhead ÷ Actual total quantity of the absorption base

Manufacturing overheads absorbed = Actual quantity of the absorption base x Actual overhead absorption rate

Predetermined manufacturing overhead absorption rate (預定間接製造費用吸收率)

Predetermined manufacturing overhead absorption rate

= Budgeted total manufacturing overhead ÷ Budgeted total quantity of the absorption base

Manufacturing overheads absorbed = Actual quantity of the absorption base x Predetermined overhead absorption rate

Example 1

J Hui operates a plant producing custom-made shoes. There are two manufacturing departments: cutting and assembly. The budgeted manufacturing overheads and levels of activity for the year ended 31 December 2010 were as follows:

	Cutting department	Assembly department
Manufacturing overheads	\$250,000	\$320,000
Machine hours	1,000,000	200,000
Direct labour hours	160,000	800,000

Job No. 334 was completed during the year. It consumed 5,000 and 850 machine hours in the cutting and assembly departments, respectively, and 760 and 3,600 direct labour hours in the cutting and assembly departments, respectively.

- (a) Calculate the manufacturing overheads of Job No. 334, using a **plant-wide (全廠)** predetermined overhead absorption rate based on direct labour hours.
- (b) Calculate the manufacturing overheads of Job No. 334, using **departmental (部門)** predetermined overhead absorption rates for each manufacturing department. The absorption base for cutting and assembly department is machine hours and direct labour hours respectively.
- (c) During 2010, the record for Job No. 334 showed the following information:

	Cutting department	Assembly department
Direct materials consumed	\$18,000	\$1,200
Direct manufacturing labour costs	\$2,000	\$800

Calculate the total manufacturing cost of Job No. 334.

(a)

(b)

(c)

Under-absorption: The predetermined amount of overheads **absorbed** < The actual amount of overheads **incurred**
Over-absorption: The predetermined amount of overheads **absorbed** > The actual amount of overheads **incurred**
The amount of over- or under-absorbed overheads should be adjusted in the cost of goods sold for the period:
 在吸收成本法下，少吸收的間接製造費用會加到銷貨成本，而多吸收的間接製造費用會從銷貨成本中扣除。

Income Statement for the year ended 31 December 2012		
	\$	\$
Sales		98,000
Less: Cost of goods sold		
Opening inventory	10,000	
Direct material cost	27,000	
Direct labour cost	18,000	
Variable production overheads	13,500	
Factory overheads absorbed	11,250	
	<u>79,750</u>	
Less: Closing inventory [(\$69,750 / 2,250) x 250]	<u>(7,750)</u>	
	72,000	
Add Under-absorption of factory overheads / Less Over-absorption of factory overheads	1,000	71,000
Gross profit		<u>27,000</u>
Less: Variable non-production overheads	(8,000)	
Fixed non-production overheads	<u>(3,000)</u>	<u>(11,000)</u>
Net profit		<u>16,000</u>

(Cost-Volume-profit analysis)

Thomson Company computes its annual predetermined manufacturing overhead absorption rate on the basis of machine hours. It estimated that 50,000 machine hours would be required for the planned level of production in 2015. The company also estimated that manufacturing overheads be \$450,000. The following is the production and sales information in 2015: Selling price:\$150, Production:8,000 unit, Sales:6,500 unit, Direct materials:\$120,000, Direct labour:\$180,000, Non-manufacturing overheads (Variable):\$50,000 and Non-manufacturing overheads (Fixed) :\$140,000

The actual manufacturing overheads for 2015 were \$580,000 and the actual number of machine hours was 48,000 hours.

- Calculate the predetermined manufacturing overhead absorption rate for 2015.
- Calculate the under-absorption or over-absorption of manufacturing overheads for 2015.
- Prepare an income statement for the year ended 31 December 2015 using absorption costing.

(a) _____

(b)

(c)

[illegible]