

Austin Community College

Accounting Department

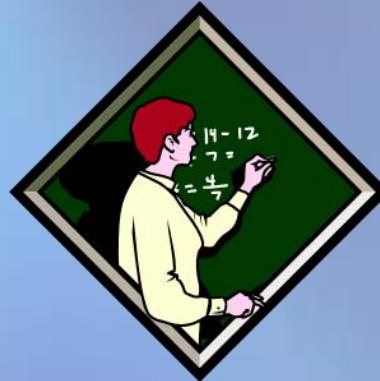
Presents

**Math for Accounting:
Managerial Concepts**



Examples

Managerial Accounting math concepts





Actual Accounting Examples

Some of the concepts may be new you.



Don't worry –
you will cover these in detail.



For now –
let's focus on the math concepts.





Tools

Use your calculator



Print the narrative





Factory Overhead

Examples: Factory rent, utilities, indirect labor, indirect materials, maintenance, depreciation

These items cannot be easily or conveniently traced to the product.





Overhead Calculation

Actual Factory Overhead for 20X1:

\$500,000

20X2 Factory Overhead is estimated to increase
by 7.5 %

What is the estimated Factory Overhead for
20X2?



Overhead Calculation

20X1 Factory Overhead: \$500,000

Estimated increase for 20X2: 7.5%

$$\$500,000 \times 1.075 = \$537,500$$

$$\$500,000 \times .075 = \$37,500 \text{ Increase}$$

$$\$500,000 + \$37,500 = \$537,500$$



Predetermined Overhead Rate

- Estimated factory overhead is applied to production during the accounting period
 - Based on a predetermined rate

Estimated Overhead	Estimate Base
\$537,500	Direct Labor Dollars
	\$215,000

Predetermined Overhead Rate

$$\frac{\text{Estimated Overhead}}{\text{Estimated Base}} = \text{Predetermined Application Rate}$$

$$\frac{\$537,500}{\$215,000} = 2.5$$

We have divided dollars by dollars.
The result is a ratio or a relationship.

Predetermined Overhead Rate

Interpretation

For every \$1 of direct labor dollars, we apply \$2.50 of factory overhead.

OR

Factory overhead is applied at the rate of 250% of direct labor dollars.

Standard Cost

Represents the amount that a unit of product should cost to make

Actual cost is compared to the standard cost
Differences are investigated

Actual

Direct Material
Direct Labor
Factory Overhead



Standard

Direct Material
Direct Labor
Factory Overhead

Standard Labor Cost

Facts:

For one desk lamp:

- Standard Labor Quantity – 18 minutes
- Standard Labor Rate – \$12.00 per hour



Standard Cost

The rate is stated in hours:

\$12 per hour

The quantity is stated in minutes:

18 minutes



I will convert the minutes into a portion of an hour (fraction or decimal).

Standard Cost

18 minutes/60 minutes = .30
or 3/10 of one hour

\$12 per hour X .30 = \$3.60



The standard labor cost is \$3.60 per lamp.

Contribution Margin

- Represents the difference between net sales and variable costs.
 - The amount that will cover fixed costs and provide for net income.



Contribution Margin

Variable Costs:

- Constant per unit
- Total varies with level of activity

Fixed Costs:

- Constant in total
- Per unit amount varies with level of activity

Contribution Margin Ratio

Item	Amount
Net Sales	\$ 850,000
<u>(Variable Costs)</u>	<u>(525,000)</u>
Contribution Margin	\$ 325,000

Compute the contribution margin ratio

Contribution Margin Ratio

Item	Amount	%
Net Sales	\$ 850,000	100
<u>(Variable Costs)</u>	<u>(525,000)</u>	61.8
CM	\$ 325,000	38.2

$$525/850 \times 100 \approx$$

$$325/850 \times 100 \approx$$

$$61.8 \% + 38.2\% = 100\%$$

Contribution Margin Ratio

Interpretation:

38.2 cents of every net sales dollar

Go to cover fixed costs and

Provide net income



Selling Price

Product selling price:

45% mark up on the product unit cost

Product Unit Cost:

Direct Material	\$ 2.00
Direct Labor	4.00
Factory Overhead	<u>1.00</u>
Total	\$ 7.00

Selling Price

Product Unit Cost X (1+ mark up) =
Selling Price

$$\$7.00 \times 1.45 = \$10.15$$

Solving for an Unknown

Direct Labor for 20X2:

\$800,000

8% higher than the 20X1 amount

What was the 20X1 Direct Labor?

Solving for an Unknown

$$\text{X1 Direct Labor} \quad \times \quad 1.08 \quad = \quad \text{X2 Direct Labor}$$

?

$$? \quad \times \quad \frac{1.08}{1.08} \quad = \quad \frac{800,000}{1.08}$$

$$? \quad \approx \quad \$740,741$$

Summary

- Proper Tools
 - Calculator, Excel, Pencil and Paper
- Reasonable answer
- Practice
- Help
 - Instructor/Tutor
 - Classmates, friends, family

