Before we start... some tips and tricks!

Watch videos at 2x speed

Mark Meldrum on Youtube (click here)

No time? Do practice problems

Brightspace notifications are a lifesaver

Helpful Acronyms

MOH	=	Manufacturing overhead
DL	=	Direct labour
DLH	=	Direct labour hours
DM	=	Direct materials
RM	=	Raw materials
RMI	=	Raw materials inventory
WIP	=	Work in process (inventory)
FGI	=	Finished goods inventory
POHR	=	Predetermined overhead rate
BEP	=	Break even point
IS	=	Income statement
BS	=	Balance sheet
SFP	=	Statement of financial position
SCF	=	Statement of cash flows
COGS	=	Cost of goods sold
COGM	=	Cost of goods manufactured
CM	=	Contribution margin
SG&A	=	Selling, general and admin

Note: you are not required to memorize these

What are manufacturing costs?

aka. product costs and inventoriable costs

Costs involved in **making a product**

Tip: Anything related to the **factory**

Direct Materials + **Direct Labour (touch labour)** + **Manufacturing Overhead**

Materials easily traced to product, eg. car tires

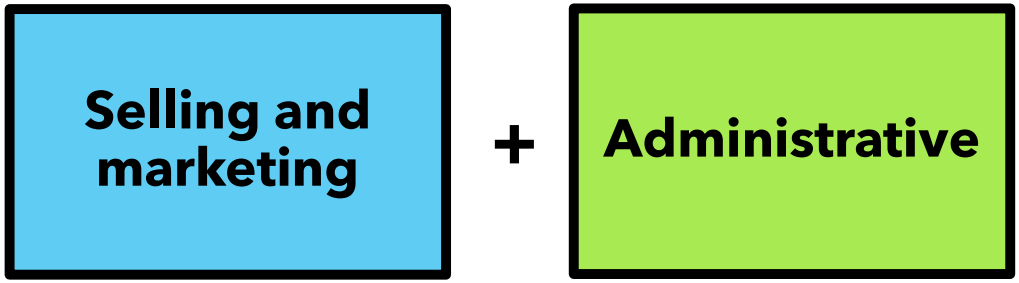
Labour easily traced to product, eg. assembly line worker

All manufacturing costs, except DM/DL, eg. factory rent

What are non-manufacturing costs?

aka. period costs and non-inventoriable costs

Costs involved with **selling and admin activities**



Eg. salesperson commission, delivery of products

Eg. **headquarters** office rent, executive pay

Why do we need inventory accounts?

Manufacturer

(Manufactures products)

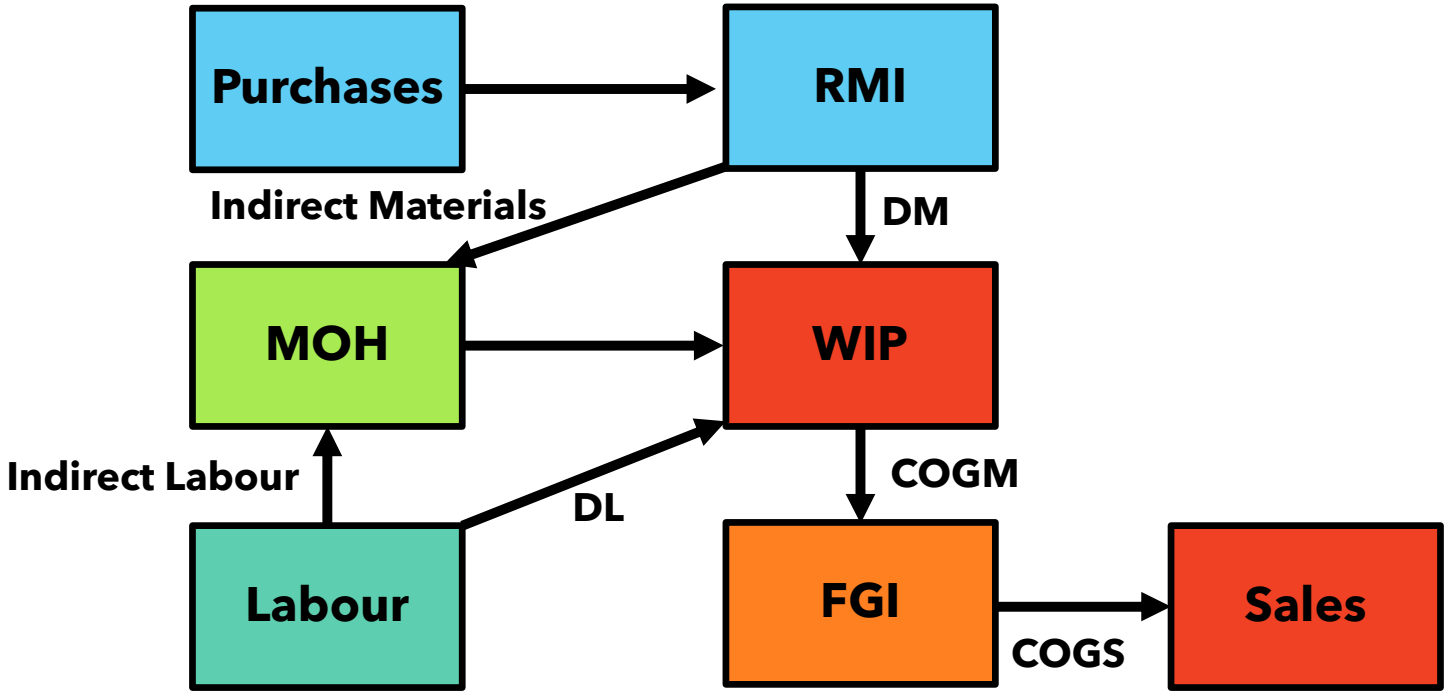
- Raw materials inventory **(RMI)**
- Work in process inventory **(WIP)**
- Finished goods inventory **(FGI)**

Merchandiser

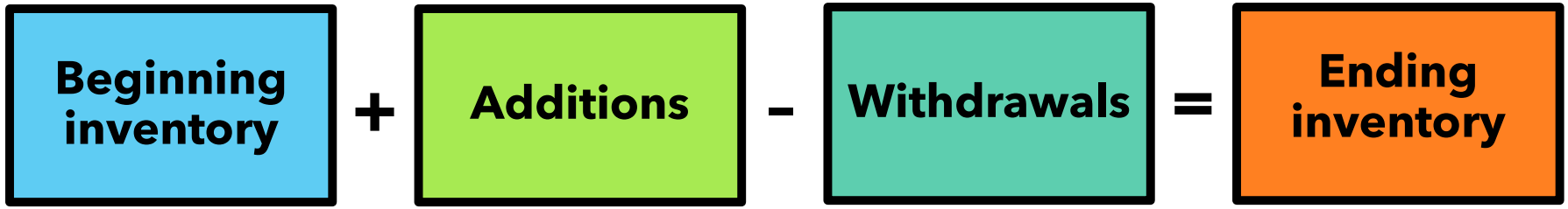
(Purchases products)

- Merchandise inventory

How do all these tie together?



The most important equation you'll need



Rearrange this equation to find your missing variable

How to calculate COGS (4 easy steps)

Step 1: Calculate raw materials used

	Beginning balance, raw materials
+	Purchases of raw materials
=	Raw materials available for use
–	Ending balance, raw materials
=	Raw materials used in production

Step 2: Calculate total manufacturing cost

	Direct materials (see step 1)
+	Direct labour
+	Manufacturing overhead
=	Total manufacturing cost

Step 3: Calculate total COGM

	Beginning balance, work in process
+	Total manufacturing cost (see step 2)
-	Ending balance, work in process
=	Cost of goods manufactured

Step 4: Calculate COGS

	Beginning balance, finished goods
+	Cost of goods manufactured
=	Goods available for sale
-	Ending balance, finished goods
=	Cost of goods sold

How to calculate COGS (1 easy step)

For retailer/merchandiser

Beginning balance, merchandise inventory
\+ **Purchases**
= Goods available for sale
\- Ending balance, merchandise inventory.
= Cost of goods sold

How to prepare a basic income statement

Sales
– Cost of goods sold
= Gross margin
– Selling and administrative expenses
= Operating income

What are variable and fixed costs?

Variable costs – increase/decrease with changes in production or activity

Fixed costs – remain constant with changes in production and activity levels

Mixed costs – portion of fixed and variable

Assumptions are valid within the **relevant range**

What are direct and indirect costs?

Direct cost - can be easily and conveniently traced to the cost object

Indirect cost - cannot be easily and conveniently traced to the cost object

What is an activity base?

Measure which drives the variable costs, used to **allocate overhead**

Some common examples:

Units produced

Labour hours

Machine hours

Predetermined Overhead Rate

Used to apply overhead to jobs

Predetermined Overhead Rate = **Estimated total manufacturing overhead cost** / **Estimated total units in the allocation base**

Note: sometimes POHR is called manufacturing overhead application rate

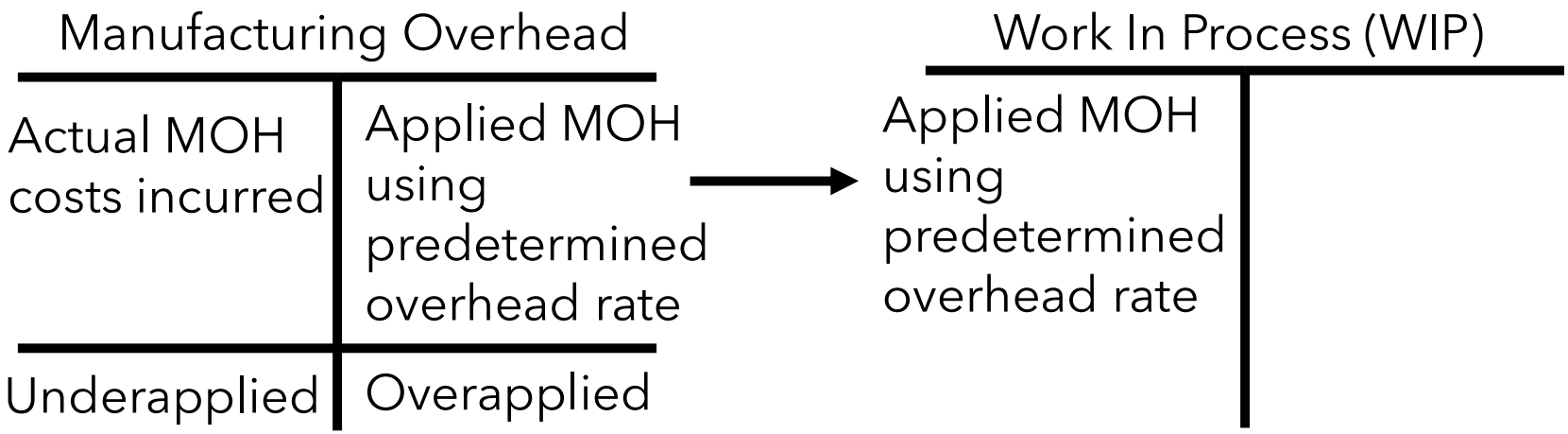
How to apply overhead

Applied to the work in process inventory account

The activity base will be specified in the question. Some examples are direct labour hours, units produced, machine hours.

How to apply overhead

Applied to the work in process inventory account



Note: it's really helpful to think about the T-chart to determine if MOH was overapplied or underapplied

How to apply overhead to different jobs

Example:

Total budgeted direct labour hours = 300 hours

Total budgeted manufacturing overhead cost = $3,600

Predetermined overhead rate = $12/direct labour hr

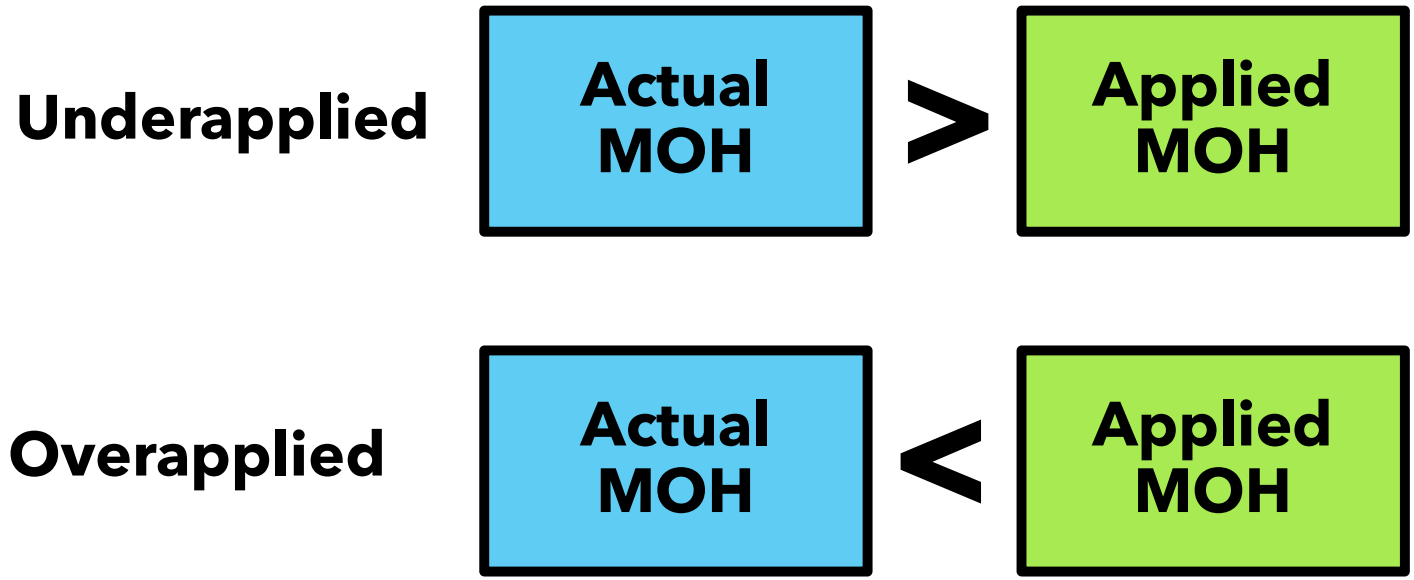
	Job 1	**Job 2**
Direct Labour Hours (activity base provided)	104	91
Applied MOH (to calculate)	$1,248 ($12/hr*104hrs)	$1,092 ($12/hr*91hrs)

Note: this question uses direct labour hours as the activity base, other problems might use direct labour costs, machine hours, units produced, etc.

Overapplied and Underapplied Overhead

This occurs when the applied MOH is not equal to actual MOH

Overapplied/underapplied overhead = difference between actual and applied MOH



How to clear manufacturing overhead

Used when overhead is underapplied/overapplied

Pro-ration Approach - the over (or under) applied difference is allocated between cost of goods sold, work-in-process, and finished goods based on their relative proportions

Write-Off Approach - the difference is simply written off to cost of goods sold (simple and cost effective)

How to use the write off approach

Write off difference to cost of goods sold

Journal Entries

Underapplied:

Cost of goods sold	$XX	
Manufacturing overhead		$XX

Overapplied:

Manufacturing overhead	$XX	
Cost of goods sold		$XX

COGS Schedule and Income Statement

Finished goods inventory, beg	$XX
Cost of goods manufactured	XX
Finished goods inventory, end	(XX)
Unadjusted cost of goods sold	XX
Over/(underapplied) overhead	**XX**
Adjusted cost of goods sold	$XX

How to solve *most* applied MOH problems

Step 1: Calculate the predetermined overhead rate (POHR)

$$\text{POHR} = \frac{\text{Estimated total manufacturing overhead cost}}{\text{Estimated total units in the allocation base}}$$

Step 2: Find the actual activity level for the job(s)

Step 3: Multiply the predetermined overhead rate by the actual activity level for each job

Applied MOH = POHR x Actual Activity

Step 4: Clear the manufacturing overhead account (write-off approach)

Underapplied:

COGS	$XX	
MOH		$XX

Overapplied:

MOH	$XX	
COGS		$XX


Kahoot!

Question 1 (note: not in your textbook)

The following data from the just-completed year are taken from the accounting records of Eccles Company:

Sales	$643,000	
Direct labour cost	90,000	
Raw material purchases	132,000	
Selling expenses	100,000	
Administrative expenses	43,000	
Manufacturing overhead applied to work in process	210,000	
Actual manufacturing overhead costs	220,000	
Inventory	**Beginning of Year**	**End of Year**
Raw materials	$ 8,000	$10,000
Work in process	5,000	20,000
Finished goods	70,000	25,000

Required:

1. Prepare a schedule of cost of goods manufactured. Assume all raw materials used in production were direct materials.
2. Prepare a schedule of cost of goods sold.
3. Prepare an income statement.

Question 2 (note: not in your textbook)

Gordon Company is highly automated and uses computerized controllers in manufacturing operations. The company uses a job-order costing system and applies manufacturing overhead cost to products on the basis of the time recorded to complete each job by the computerized controllers attached to each machine. The following estimates were used in preparing the predetermined overhead rate at the beginning of the year:

Machine time in hours	4,000
Manufacturing overhead cost	$230,000

A severe economic recession resulted in cutting back production and a buildup of inventory in the company's warehouse. The company's cost records revealed the following actual cost and operating data for the year:

Page 187

Machine time in hours	3,150
Manufacturing overhead cost	$228,000
Inventories at year-end:	
Raw Materials	$ 20,000
Work in Process	$ 32,000
Finished Goods	$530,000
Cost of Goods Sold	$428,000

Required:

1. Compute the company's predetermined overhead rate for the year.
2. Compute the underapplied or overapplied overhead for the year.
3. Prepare the journal entry to show the disposal of under/overapplied overhead.

Question 3 (note: not in your textbook)

Purchases of raw materials	$ 360,000
Raw materials inventory, beginning	40,000
Raw materials inventory, ending	68,000
Depreciation, factory	168,000
Insurance, factory	20,000
Direct labour	240,000
Maintenance, factory	120,000
Administrative expenses	280,000
Sales	1,800,000
Utilities, factory	108,000
Supplies, factory	4,000
Selling expenses	320,000
Indirect labour	260,000
Work in process inventory, beginning	28000
Work in process inventory, ending	120,000
Finished goods inventory, beginning	40,000
Finished goods inventory, ending	160,000

The following information pertains to the most recent quarter at Precious Production Limited.

Required:

1. Prepare a schedule of cost of goods manufactured.
2. Prepare an income statement.
3. Assume that the company produced the equivalent of 10,000 units of product during the year. What was the average cost per unit for direct labour? What was the average cost per unit for factory insurance?

Page 52

4. Assume that the company expects to produce 12,000 units of product during the coming year. What average cost per unit and what total cost would you expect the company to incur for direct materials at this level of activity? For factory insurance? (In preparing your answer, assume that direct materials is a variable cost and that depreciation is a fixed cost; also assume that depreciation is computed on a straight-line basis.)