ACCTG 221 Cost and Management Accounting

UNIVERSITY OF AUCKLAND · LEVEL 2 · SEMESTER 2, 2026

Full guide + ask Sia about ACCTG 221

SIDE 1/2 METHOD MAP · formulas · assumptions · decision rules — **OPEN-BOOK EXAM SHEET** — v2 · 2026-10-24

1 · Exam map

COURSE DATA + FINAL ANNOUNCEMENT

10	20	20	FINAL 50%

ASSESSMENT	WT
Turn-ins and Self-reviews	10%
Assignment	20%
Test	20%
Final Exam	**50%**

"Summary sheets. These must be A4 size or smaller and may be either typed or handwritten. A maximum of five double-sided sheets is permitted."

ACCTG 221 course home announcement on the final exam, Semester 2 2026

(MD_ACCTG_221_Cost_and_Management_Accounting_Home_3.md)

2 · CVP sequence

CH 1 · W1

SP − VC = CM/unit → CM × Q = total CM → total CM − FC = profit

keep unit $ separate from total $

Read every CVP question left to right; fixed cost enters after total contribution.

CORE FORMULAS

```
CM/u = selling price - variable cost/u
CM ratio = CM ÷ sales revenue
Profit = Q × CM/u - fixed cost
BE units = fixed cost ÷ CM/u
BE sales $ = fixed cost ÷ CM ratio
Target Q = (fixed cost + target profit) ÷ CM/u
Margin of safety = expected sales - BE sales
```

When it bites: identify whether the answer is units, sales dollars, bundles or %. Round a whole-unit target upward, then prove: rounded Q × CM − fixed cost ≥ target. Model assumes price, unit variable cost, fixed-cost pool and mix hold within the relevant range.

SALES MIX

Build one ***composite bundle*** from the stated proportions. Bundle CM = Σ(product quantity × product CM). Find break-even bundles, then unpack each product quantity. A changed mix requires a new bundle; do not reuse the old weighted contribution.

CHANGED ASSUMPTION	REBUILD	EXPECTED DIRECTION, ALL ELSE EQUAL
Selling price rises	CM denominator	Required units fall
Unit variable cost rises	CM denominator	Required units rise
Fixed cost rises	Numerator	Required units rise
Sales mix changes	Composite bundle	Depends on weighted CM
Capacity step crossed	Fixed-cost pool + range	Old linear answer invalid

Reverse questions: when volume is given, rearrange the same profit equation to solve for selling price, allowable variable cost or fixed cost. Change one assumption at a time, state the feasible capacity, and compare scenarios in both numerical and managerial language.

Interpretation check: a larger safety margin puts expected sales further above break-even, but does not prove demand or capacity. State its denominator and forecast assumption.

3 · Cost behaviour

CH 2 · W2

PATTERN	TOTAL	PER UNIT
Variable	changes with activity	constant
Fixed	constant in range	falls as activity rises
Mixed	fixed + variable	depends on volume
Step	constant by band	jumps at capacity step

HIGH–LOW

```
Variable rate b = (Cost at high activity - Cost at low activity) ÷ (High activity - Low activity)
Fixed cost a = Total cost - b × activity
Cost function: Y = a + bX
```

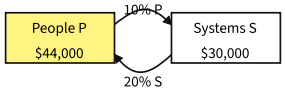
Select highest and lowest activity, not highest and lowest cost. Substitute into both selected observations; fixed-cost estimates should agree apart from rounding. High–low uses only two points, so flag outliers and range limits.

Evidence boundary: sketch the expected cost line before calculating. A variable-cost line begins at the origin; a fixed-total line is horizontal; a mixed line has a positive intercept. Compare a high–low result with the other observations. Regression uses all observations and can report statistical evidence about a proposed driver, but a neat line still needs causal sense and the relevant range.

4 · Support allocation

CH 2 · DECISION TABLE

METHOD	RECOGNISES SUPPORT-TO-SUPPORT?	PROCEDURE
Direct	No	Renormalise over operating departments only.
Step-down	Partly	Choose order; allocate; close department; never receive back.
Reciprocal	Fully	Solve simultaneous full-cost equations, then allocate outward.



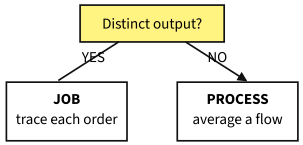
P = 44,000 + .20S

S = 30,000 + .10P

Mutual arrows become simultaneous equations before any operating allocation.

5 · Choose the costing system

CH 3 · W3



Custom contracts and batches point to job records; homogeneous continuous output points to process averaging.

QUESTION CLUE	USE	CENTRAL PROOF
Identifiable order, batch or service	Job costing	DM + DL + applied OH = job cost
Homogeneous departmental flow	Process costing	Physical units and total cost reconcile

6 · Job costing

CH 3

RATE AND APPLICATION

```
Predetermined OH rate = budgeted OH ÷ budgeted allocation-base quantity
Applied OH = rate × actual base used by job
Total job cost = direct material + direct labour + applied OH
Unit cost = total job cost ÷ job units
```

A predetermined rate gives timely job costs before actual period totals are known. Label the base (machine-hour, labour-hour, etc.). At period end compare **actual OH** with **applied OH**; under/overapplication is period-wide unless instructed otherwise.

JOB RECORD RECEIVES	SOURCE / CALCULATION
Direct material	Trace to the identifiable job.
Direct labour	Trace labour used by the job.
Applied overhead	Predetermined rate × actual job base.
Unit cost	Total job cost ÷ job output.

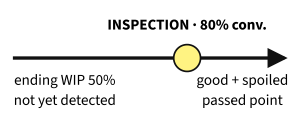
7 · Process costing

CH 3 · WEIGHTED AVERAGE

1. **Physical flow:** opening WIP + started = transferred + ending WIP + loss.
2. **Equivalent units:** separate materials and conversion completion.
3. **Cost/EU:** cost to account for ÷ equivalent units.
4. **Assign cost:** transferred + ending WIP (+ separately treated loss).

8 · Spoilage schedule

CH 4 · W4



The inspection point decides which units can be detected as loss and which good units bear normal spoilage.

1. Add spoilage as a separate physical-flow line.
2. Mark inspection point; ask which categories reached it.
3. Read the stated normal-loss base exactly.
4. Normal loss = rate × stated base; abnormal = detected loss − normal.
5. Assign normal cost to qualifying good output; report abnormal cost separately.

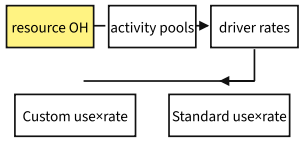
LOSS SPLIT

```
Physical spoilage = units to account for - good transferred - ending WIP
Abnormal units = detected spoilage - normal units
```

Normal does not mean desirable. It is expected under efficient conditions and absorbed by good output. Abnormal loss remains visible for investigation. Keep any disposal value or rework recovery separate unless the stated method says where it goes.

9 · ABC two-stage trace

CH 5 · W5



Separate pools, calculate one rate per causal driver, then charge measured consumption.

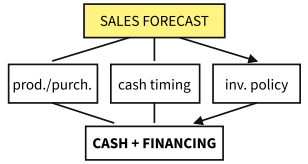
ABC

```
Driver rate = activity-pool cost ÷ total driver volume
Product OH = Σ(driver rate × product driver use)
ABC unit cost = direct unit cost + product OH ÷ product units
```

Reconcile each pool before pricing or profitability claims. ABC redistributes existing overhead; it saves cash only if an activity changes and resources are removed or redeployed. It is most useful when overhead is material, complexity differs and credible drivers can be maintained.

10 · Linked budgets

CH 7 · W8



Demand drives operating schedules; timing and inventory policy converge in cash and financing.

INVENTORY LINKS

```
Production = sales + desired ending FG - opening FG
Purchases = cost of sales + desired ending inventory - opening inventory
Cash ending = opening cash + receipts - payments + financing
```

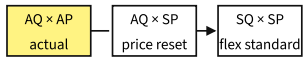
Keep inventory schedules on a **cost or unit basis**; collections use sales revenue. Follow each cohort across periods and prove its percentages total the expected collection. A profitable budget can still require borrowing because cash dates differ from accrual recognition.

CHECK	PROOF
Inventory	Opening + purchases/production = use + ending
Collections	Each sales cohort is fully traced
Cash	Opening + net flows + finance = ending
Spreadsheet	One labelled assumption; no stale duplicate

Scenario discipline: slower collections shift cash later without immediately changing sales revenue; higher inventory policy raises near-term purchases and cash needs. Identify the maximum borrowing month and keep interest timing separate from principal.

11 · Flexible-budget bridge

CH 8 · W9



PRICE EFFICIENCY

adjacent gaps = total variance

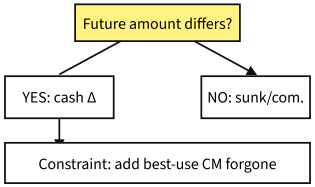
Change one factor at a time: actual price first, then input quantity at standard price.

DIRECT-INPUT VARIANCES

```
AP = actual cost ÷ AQ
SQ allowed = actual output × standard input/unit
Price = AQ × (AP - SP)
Efficiency = SP × (AQ - SQ)
Total = AQ × AP - SQ × SP
```

12 · Relevant-cost tree

CH 9 · W10



Relevance belongs to a stated alternative and horizon, not to permanent variable/fixed labels.

DECISION AMOUNT

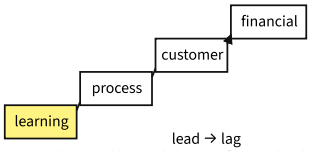
```
Incremental profit = incremental revenue - relevant variable cost - relevant fixed cost - opportunity cost
Contribution per scarce unit = product CM ÷ scarce-resource use
```

DECISION	COMPARE
Special order	Price against variable + special fixed + opportunity cost
Keep/drop	Lost contribution vs avoidable fixed cost + alternate use
Make/buy	Avoidable internal cost vs purchase + opportunity cost
Constraint	Rank by CM per bottleneck unit; respect demand limits

Allocated common cost is irrelevant if it remains. A fixed cost is relevant when avoidable. State capacity and time-horizon assumptions, then add qualitative differences: quality, reliability, customer response, skills and supplier dependence.

13 · Performance + ethics

CH 6 + 10



A scorecard is a testable causal chain, not four unrelated measures.

RETURNS

```
ROS = operating income ÷ revenue
ROI = operating income ÷ total investment
RI = operating income - required return × investment
EVA = after-tax operating income - WACC × (total assets - current liabilities)
```

For each objective specify definition, owner, source and target. Pair speed with quality, sales with margin, and cost cuts with safety/service. Test timing; correlation does not prove the map.

ACCTG 221 Cost and Management Accounting · Worked Drills

UNIVERSITY OF AUCKLAND · SOURCE-NUMBERED METHODS · PROOF BEFORE INTERPRETATION

Full guide + ask Sia about ACCTG 221

SIDE 2/2 WORKED DRILLS · traps · fast recall · final checks

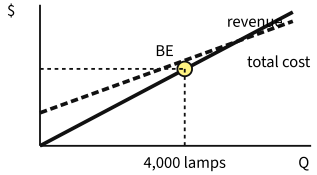
OPEN-BOOK EXAM SHEET

carry every example to the proof

14 · Harbour Lamps COURSE OVERVIEW WORKED EXAMPLE

Given: selling price $58; variable cost $40 per lamp; fixed cost $72,000/month; target profit $27,000; expected sales 6,000 lamps.

STEP	CALCULATION	ANSWER
CM/u	58 − 40	$18
Break-even	72,000 ÷ 18	4,000 lamps
Target	(72,000 + 27,000) ÷ 18	5,500 lamps
Safety	6,000 − 4,000	2,000; 33.3%



At 4,000 lamps, 4,000 × $18 contribution exactly covers $72,000 fixed cost.

PROOF

```
4,000 × $18 = $72,000 → profit $0
5,500 × $18 - $72,000 = $27,000
```

Trap: the course chapter's separate desk-lamp drill uses $48 selling price and $30 total variable cost, also producing $18 contribution. Do not merge inputs from different questions.

15 · Tāmaki mix CH 1 QUICK DRILL

Bundle = 3 Standard at $12 CM + 2 Premium at $22 CM; fixed cost $160,000.

```
Bundle CM = 3×12 + 2×22 = $80
BE bundles = 160,000 ÷ 80 = 2,000
Units = 6,000 Standard + 4,000
Premium
```

Proof: 2,000 × $80 = $160,000. If bundles are fractional, round bundles up before multiplying every product quantity.

CVP TRAP	CORRECTION
Revenue in denominator	Use contribution, after variable cost.
Old weighted CM	Rebuild bundle after mix change.
Answer outside capacity	Mathematically sufficient ≠ feasible plan.

CVP ANSWER SKELETON

1. Classify selling price, unit variable costs and total fixed cost.
2. Compute CM with its unit; for a mix, draw one composite bundle.
3. Write profit = total CM − fixed cost and solve for the requested unknown.
4. Round only the decision quantity, then prove the target is met.
5. State the relevant range, capacity and stable-mix assumptions.

16 · High–low check CH 2 PRACTICE

Given: 900 machine-hours cost $26,600; 300 hours cost $18,800.

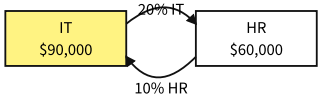
WORK

```
b = (26,600 - 18,800) ÷ (900 - 300)
= 7,800 ÷ 600 = $13/MH
a = 26,600 - 900×13 = $14,900
Y = $14,900 + $13MH
```

PROOF POINT	SUBSTITUTION	COST
High	14,900 + 13×900	$26,600
Low	14,900 + 13×300	$18,800

Interpret: $13 is estimated variable cost per machine-hour; $14,900 is total fixed cost within the observed relevant range. Two-point evidence is provisional if either month is unusual.

17 · City Services reciprocal CH 2 WORKED EXAMPLE



IT = 90,000 + .10HR

HR = 60,000 + .20IT

solve totals, then allocate outward

Each equation starts with own direct cost and adds the service received from the other department.

```
IT = 90,000 + .10(60,000 + .20IT)
.98IT = 96,000 → IT = $97,959.18
HR = 60,000 + .20(97,959.18)
HR = $79,591.84
```

Allocate these full reciprocal totals using operating shares that exclude self-service. Do not mistake the sum of reciprocal totals for extra external cost: circular services have been resolved inside the equations.

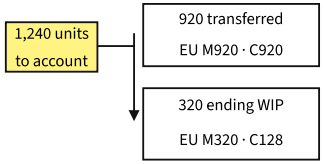
ALLOCATION TRAP	FIX
Step-down sends cost back	Closed department never receives again.
Direct includes support denominator	Renormalise to operating recipients.
Equations reverse percentages	Use service *received* in each equation.

METHOD SWITCH TEST

FACT IN QUESTION	METHOD IMPLICATION
Ignore all support-to-support use	Direct allocation
Recognise some service in a closure order	Step-down; state who closes first
Recognise mutual flows fully	Reciprocal equations
Weak or convenient base	Allocation may not reflect causality

18 · Waitematā Foods CH 3 QUICK DRILL

Given: 920 units transferred; 320 ending units; materials 100% complete; conversion 40% complete.



Physical units stay 1,240; equivalent work differs by cost category.

COST CATEGORY	TRANSFERRED	ENDING WIP	EU
Materials	920	320×100%=320	**1,240**
Conversion	920	320×40%=128	**1,048**

Physical proof: 920 + 320 = 1,240 units. The guide's fuller Koru Drinks drill has 140 opening + 1,100 started = the same 1,240 total; keep each question's facts separate.

19 · Manukau Mixers loss CH 4 QUICK DRILL

Given: 4,600 good units; 300 spoiled at end; normal rate 4% of good output; $15 per EU at inspection.

UNITS

```
Normal = 4% × 4,600 = 184
Abnormal = 300 - 184 = 116
```

COST

```
Normal cost = 184 × $15 = $2,760 →
good output
Abnormal cost = 116 × $15 = $1,740 →
separate
```

Proof: 184 + 116 = 300 spoiled; $2,760 + $1,740 = $4,500 detected-loss cost. Apply the normal rate to the stated base, never automatically to units started.

SPOILAGE TRAP	CORRECTION
Ending WIP before inspection	Cannot yet be classified as detected spoilage.
Abnormal as another %	It is the residual after normal units.
Normal = acceptable	Accounting expectation, not approval of waste.

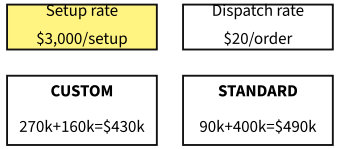
TUI CERAMICS INSPECTION DRILL

Given: 10,000 units started; 8,400 good transferred; 600 ending WIP at 50% conversion; inspection at 80%; normal spoilage is 8% of good units passing inspection.

```
Physical spoilage = 10,000 - 8,400 -
600 = 1,000 units
Ending WIP is before inspection →
not detected loss
Normal = 8%×8,400 = 672 units
Abnormal = 1,000-672 = 328 units
```

20 · North Shore Cases ABC CH 5 WORKED EXAMPLE

Pools: setup $360,000/120 setups; dispatch $560,000/28,000 orders. Custom: 90 setups, 8,000 orders, 10,000 units, $120 direct/u. Standard: remaining 30 setups, 20,000 orders, 20,000 units, $85 direct/u.



$430,000 + $490,000 = $920,000 pools

Both activity pools reconcile before unit costs are interpreted.

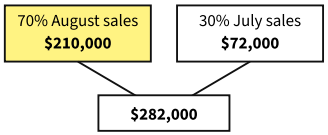
	CUSTOM	STANDARD
OH/unit	430,000÷10,000=$43	490,000÷20,000=$24.50
Direct/unit	$120	$85
ABC/unit	**$163**	**$109.50**

Decision: complexity makes Custom consume most setups. This is a cost signal, not automatic saving. A price or process recommendation must test driver causality, demand, avoidability and implementation cost.

21 · Karangahape Traders CH 7 QUICK DRILL

Given: July sales $240,000; August $300,000; COS 60%; ending inventory 25% of next month's COS; July opening inventory $36,000. Collections: 70% current, 30% next.

```
July COS = .60×240,000 = $144,000
July ending = .25×(.60×300,000) =
$45,000
July purchases = 144,000 + 45,000 -
36,000
= $153,000
August collections = .70×300,000 +
.30×240,000
= $282,000
```



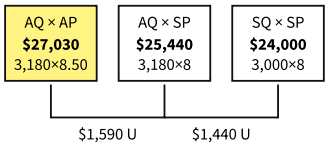
Collection cohorts meet in the month cash moves; inventory stays on its cost basis.

TRAP	WHY WRONG
25% × August sales	Inventory policy uses next month's *cost* of sales.

AORAKI CYCLES LINKED MAY PLAN

22 · Southern Packs variance CH 8 WORKED EXAMPLE

Given: standard 2.5 kg at $8/kg per finished unit; actual output 1,200; actual quantity 3,180 kg costing $27,030.



TOTAL $3,030 U

The three amounts make the sign and reconciliation visible.

```
AP = 27,030 ÷ 3,180 = $8.50/kg
SQ = 1,200×2.5 = 3,000 kg
Price = 3,180×(8.50-8.00) = $1,590
U
Efficiency = 8×(3,180-3,000) =
$1,440 U
Total = 27,030-24,000 = $3,030 U
```

Proof: 1,590 + 1,440 = 3,030 U. Standard quantity comes from *actual output*. Investigate only after reconciliation: price, material quality, waste, defects, delivery and downtime may interact.

23 · Fast variance extensions CH 8 PRACTICE

Cause note: size + direction → operational hypothesis → related variance/non-financial measure → evidence required. Variances identify questions; they do not prove causes or assign blame.

COMMON ERROR	REPAIR
Planned output in SQ	Use actual output × standard input relationship.
Favourable = good	Check quality, service, safety and recurrence.
Signs memorised blindly	Write the three dollar columns and take adjacent gaps.

VARIABLE-OVERHEAD DRILL

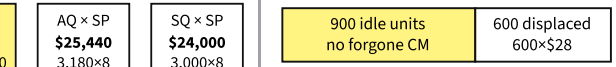
Standard support is 1.5 hours at $13 per finished unit. Actual output 1,000 units; actual hours 1,550; actual overhead $20,460.

```
AR = 20,460÷1,550 = $13.20/h
SQ allowed = 1,000×1.5 = 1,500 h
Spending = 1,550×(13.20-13.00) =
$310 U
Efficiency = 13×(1,550-1,500) = $650
U
Total = $960 U
```

Proof: actual $20,460 − flexible standard (1,500×$13 = $19,500) = $960 U. Pair spending with rate evidence and efficiency with the operational use of the allocation base; do not infer a cause from the sign alone.

24 · Waiheke special order CH 9 WORKED EXAMPLE

Given: 1,500 jackets at $74; variable cost $52 each; setup $6,000; idle capacity 900; remaining 600 displace regular jackets contributing $28 each.



Order CM: 1,500×($74−$52) = $33,000

Setup $6,000 + opportunity $16,800

Incremental profit = $10,200

Split capacity first: only displaced units carry the $16,800 opportunity cost.

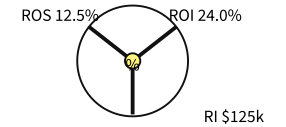
LINE	CALCULATION	EFFECT
Revenue	1,500×74	+$111,000
Variable cost	1,500×52	−$78,000
Setup	given	−$6,000
Opportunity	600×28	−$16,800
Profit		**+$10,200**

Accept on the stated financial facts before qualitative effects. The conclusion depends on the capacity fact; with 1,500 idle units opportunity cost would be zero. Check customer response, quality, workforce effects and regular-market relationships.

25 · Waitematā returns CH 10 QUICK DRILL

Given: revenue $2,400,000; operating income $300,000; investment $1,250,000; required return 14%.

```
ROS = 300,000 ÷ 2,400,000 = 12.5%
ROI = 300,000 ÷ 1,250,000 = 24.0%
Charge = 14%×1,250,000 = $175,000
RI = 300,000-175,000 = $125,000
```



ROS and ROI are percentage returns; residual income is a dollar value after the capital charge.

ROI conflict: a project returning 18% exceeds a 12% required return but lowers a division currently at 24%; RI can encourage acceptance while ROI can encourage rejection.

26 · Method chooser ALL CHAPTERS · FAST RECALL

PROMPT CLUE	BUILD FIRST
Price, VC, FC, target	CM equation + answer unit
High/low activity	Δcost÷Δactivity; intercept
Mutual support	Full-cost equations
Part-complete output	Physical flow; separate EU

Semester Two examination period, 29 October – 16 November 2026 (check your personal exam timetable). Check your unit's exam rules for any limit on what may be brought in.