ACC 300 · MEETING 20

Inventory estimation and the cash conversion cycle

November 10, 2026

Inventory value and cash timing

Buy goods → Hold inventory → Sell goods → Collect cash.

Estimate inventory value

Estimate ending inventory at cost when a count is unavailable.

Assess cash timing

Estimate the time between paying suppliers and collecting from customers.

Why estimate inventory instead of counting it?

Counting constraint: A full count takes staff time and can interrupt operations.

Prepare a report between counts	Plan purchases or investigate records	Estimate goods destroyed in a loss
Managers need a balance before the next scheduled count.	Managers need a preliminary amount while staff verify quantities.	Staff cannot count goods that no longer exist.

Two inventory estimation methods

Both methods estimate **ending inventory at cost**.

Gross profit method

Use net sales with either:

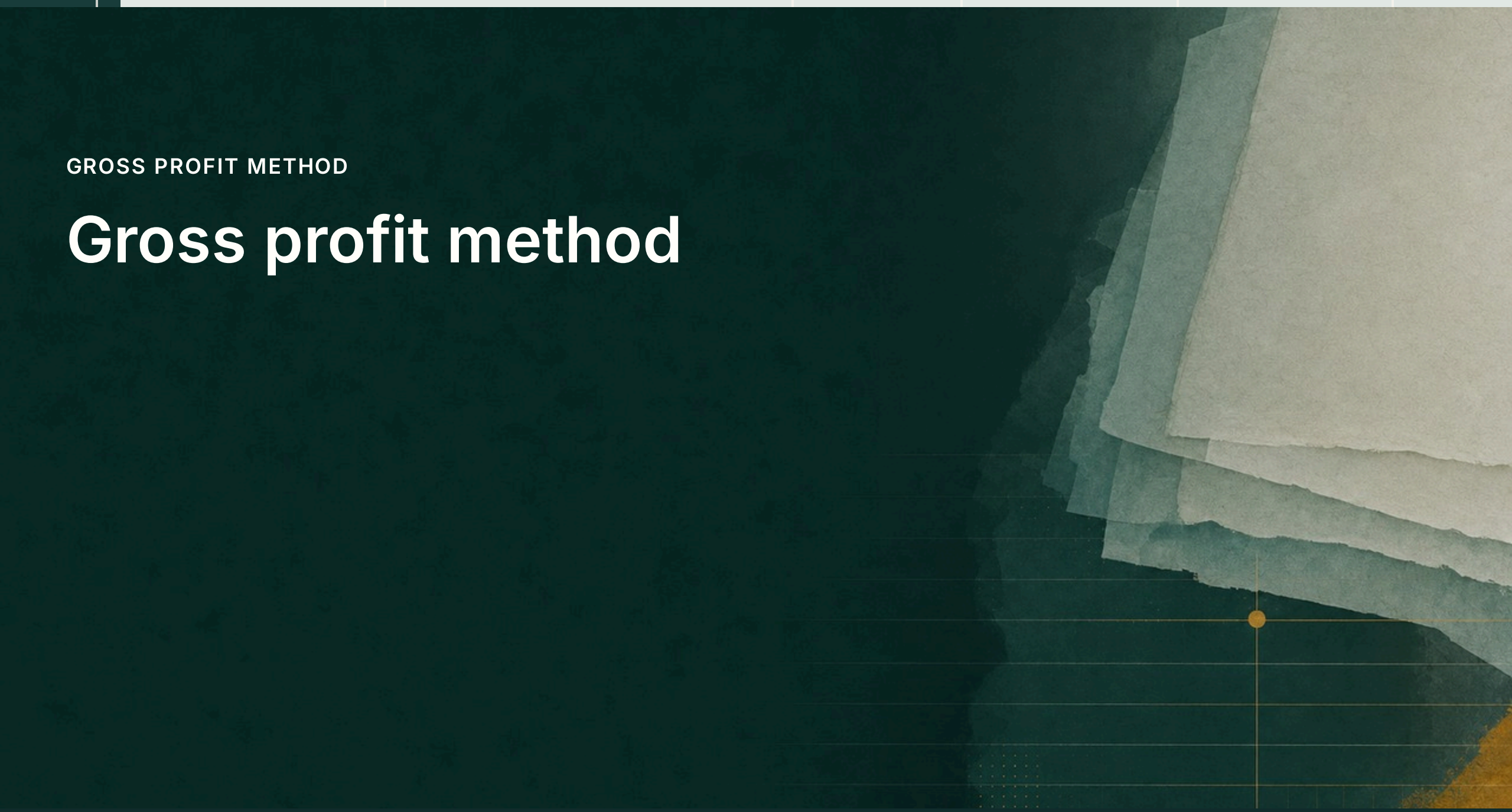


- **Gross profit margin on sales**
- **Markup on cost**

Retail inventory method

Use records of the same goods at cost and retail selling prices.

Gross profit method



Inventory, COGAS, and COGS

Cost of goods available for sale (COGAS) = Beginning inventory + Net purchases.

Inventory

DEBIT	CREDIT
Beginning inventory	
Net purchases	Cost of goods sold
Ending balance	

↓

Estimate inventory:

Subtract estimated cost of goods sold from COGAS.

→ **Estimated gross profit**

= Net sales × Assumed gross profit margin

Estimated cost of goods sold

= Net sales − Estimated gross profit

Check inputs: Confirm ownership, cutoff, net purchases, and net sales.

Gross profit margin

Gross profit = Net sales − Cost of goods sold.

Why use an assumed gross profit margin?

- Without ending inventory, we cannot finish calculating current cost of goods sold or gross profit.
- Use a prior-period gross profit margin that fits current prices, costs, and product mix, or use other supporting information.

Find a gross profit margin from a known period

Prior-period gross profit margin =

$$\frac{\text{Prior-period gross profit}}{\text{Prior-period net sales}}$$

Use this percentage as the assumed current gross profit margin if it still fits the business.

Apply it to current sales

Estimated gross profit
= Current net sales × Assumed gross profit margin

Estimated cost of goods sold
= Current net sales − Estimated gross profit

Gross profit method: February records

Sound Decision needs ending inventory for its February 2026 internal report. Staff will check the inventory records at the end-of-March quarterly count.

Management uses a prior-period gross profit margin that fits current prices, costs, and product mix. All amounts are US dollars.

Available records	Amount
Beginning inventory at cost	$27,100
Net purchases at cost	$98,600
Net sales	$142,000
Supported gross profit margin	35.00%

Assumption: All goods available were either sold or remain on hand.

Calculate: Estimate February cost of goods sold, then ending inventory at cost.

Gross profit method: February estimate

Sound Decision · February case continued: Beginning inventory $27,100; net purchases $98,600; net sales $142,000; assumed gross profit margin 35.00%.

February estimate	Formula	Calculation	Amount
Estimated gross profit	Net sales × Assumed gross profit margin	$142,000 × 35.00%	$49,700
Estimated COGS	Net sales − Estimated gross profit	$142,000 − $49,700	$92,300
COGAS	Beginning inventory + Net purchases	$27,100 + $98,600	$125,700
Estimated ending inventory	COGAS − Estimated COGS	$125,700 − $92,300	**$33,400**

July inventory estimate: Practice

Spend about 3 minutes working on your own or with those around you.

New case: Sound Decision, July 2026. The company needs an internal inventory estimate before its next count. All amounts are US dollars.

July records	Amount
Beginning inventory at cost	$24,000
Net purchases at cost	$76,000
Net sales	$120,000
Supported gross profit margin	30%

Assume all goods available were sold or remain on hand.

Calculate estimated COGS, COGAS, and ending inventory at cost. Submit ending inventory in the next poll.

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For Sound Decision’s July case, what is estimated ending inventory at cost?

Beginning inventory $24,000; net purchases $76,000; net sales $120,000; gross profit margin 30%.

A $64,000

B $84,000

C $16,000

D $(8,000)

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Correct answer: C

For Sound Decision’s July case, what is estimated ending inventory at cost?

Beginning inventory $24,000; net purchases $76,000; net sales $120,000; gross profit margin 30%.

A **$64,000**
Uses the profit share as the cost share.

B **$84,000**
Reports estimated COGS instead of ending inventory.

C **$16,000**
C is correct. Subtract estimated COGS from COGAS.

D **$(8,000)**
Omits beginning inventory from COGAS.

July inventory estimate: Solution

Sound Decision · July case continued: Beginning inventory $24,000; net purchases $76,000; net sales $120,000; assumed gross profit margin 30%.

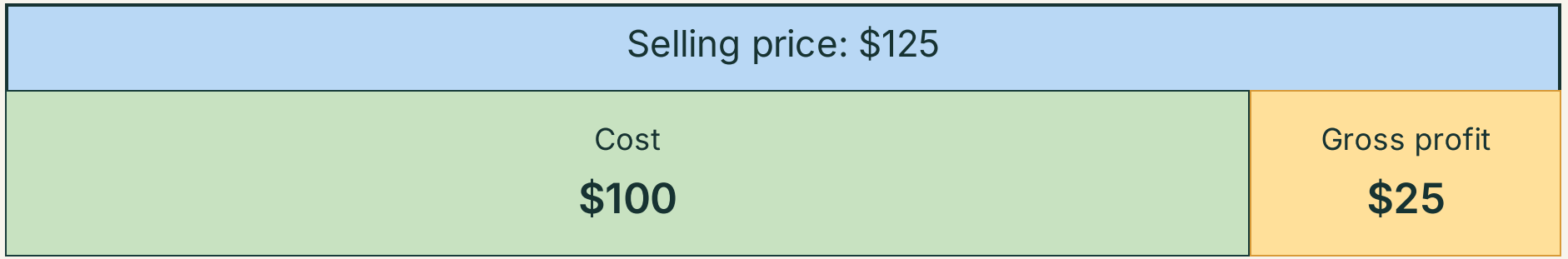
Measure	Formula	Calculation	Result
Estimated gross profit	Net sales × Assumed gross profit margin	$120,000 × 30%	$36,000
Estimated COGS	Net sales − Estimated gross profit	$120,000 − $36,000	$84,000
COGAS	Beginning inventory + Net purchases	$24,000 + $76,000	$100,000
Estimated ending inventory	COGAS − Estimated COGS	$100,000 − $84,000	**$16,000**

Gross profit method: Markup on cost

Convert markup on cost to gross profit margin. Separate example: one Sound Decision product.

Markup on cost = $\frac{\text{Gross profit}}{\text{Cost}}$

Gross profit margin = $\frac{\text{Gross profit}}{\text{Selling price}}$



$\frac{\$25}{\$100} \times 100\% = \mathbf{25\%}$

$\frac{\$25}{\$125} \times 100\% = \mathbf{20\%}$

Gross profit margin = $\frac{\text{Markup}}{1 + \text{Markup}}$ (Use decimal markup.)

Evaluating a gross profit estimate

PRICES, COSTS, AND PRODUCT MIX

Changes can raise or lower the gross profit margin.

The prior-period margin may no longer apply.

PURCHASE AND SALES RECORDS

Missing purchases distort COGAS.

Missing sales distort estimated COGS.

MISSING OR DAMAGED GOODS

Theft reduces goods on hand.

Damage can reduce their value.

CHECK AGAINST A LATER PHYSICAL COUNT

Adjust for purchases and sales since the estimate.

Compare with the count and investigate differences.

Inventory estimates at different gross profit margins

Return to Sound Decision's February case: COGAS $125,700 and sales $142,000.

Estimated gross profit = Net sales × Assumed gross profit margin

Estimated COGS = Net sales − Estimated gross profit

Estimated ending inventory = COGAS − Estimated COGS

Assumed margin	Estimated gross profit	Estimated COGS	Estimated ending inventory
30.00%	$142,000 × 30.00% = **$42,600**	$142,000 − $42,600 = **$99,400**	$125,700 − $99,400 = **$26,300**
35.00%	$142,000 × 35.00% = **$49,700**	$142,000 − $49,700 = **$92,300**	$125,700 − $92,300 = **$33,400**
40.00%	$142,000 × 40.00% = **$56,800**	$142,000 − $56,800 = **$85,200**	$125,700 − $85,200 = **$40,500**

- **Effect:** A lower assumed gross profit margin raises estimated COGS and lowers inventory.

RETAIL

The retail inventory method



Cost and retail records

A **retail pool** groups products with similar cost-to-retail relationships. We use one ratio to estimate their combined ending inventory cost.

Cost column: what the goods cost

Record the acquisition cost of beginning inventory and purchases.

Retail column: their selling prices

Record the retail selling prices of those same goods, including unsold goods.

- **Available retail:** Add the retail values of beginning goods and purchases. This amount is not sales revenue.
- **Why group goods:** A shared ratio is useful only when the cost-to-retail relationship fits the goods remaining.

Retail method: April records

New case: Sound Decision, April 2026 retail pool. No price changes, returns, transfers, or shrinkage apply.

Goods available = Beginning inventory + Net purchases, in each column.

Pool record	Cost	Retail
Beginning inventory	$18,200	$28,000
Net purchases	$72,800	$112,000
Goods available	$91,000	$140,000

Net sales are $106,000. Keep both columns tied to the same goods.

The cost-to-retail ratio

$$\text{Cost-to-retail ratio} = \frac{\text{Available cost}}{\text{Available retail}}.$$

Sound Decision · April continued	Calculation or amount
Available cost	$91,000
Available retail	$140,000
Cost-to-retail ratio	$\frac{\$91,000}{\$140,000} = 65.00\%$

Meaning: The goods cost 65.00% of their recorded retail selling prices.

Use: Multiply the unsold goods' retail amount by this ratio to estimate their cost. Assume the remaining goods have the same cost share as the pool.

Retail method: April estimate

Sound Decision · April case continued: COGAS $91,000; available retail $140,000; net sales $106,000; cost-to-retail ratio 65.00%.

April ending inventory	Formula	Calculation	Amount
Ending inventory at retail	Available retail − Net sales	$140,000 − $106,000	$34,000
Estimated ending cost	Ending retail × Cost-to-retail ratio	$34,000 × 65.00%	**$22,100**
Estimated COGS	COGAS − Estimated ending cost	$91,000 − $22,100	$68,900

August retail estimate: Practice

Spend about 3 minutes working on your own or with those around you.

New case: Sound Decision, August 2026 retail pool. Use average-cost retail. All amounts are US dollars.

Sound Decision · August	Cost	Retail selling prices
Beginning inventory	$18,000	$30,000
Net purchases	$72,000	$120,000

Net sales are $110,000. No price changes or missing goods apply.

Calculate the cost-to-retail ratio, ending inventory at retail, and estimated ending inventory at cost. Submit the cost estimate in the next poll.

iClicker | Question 2 of 5

For Sound Decision’s August pool, what is estimated ending inventory at cost?

Sound Decision · August	Cost	Retail
Beginning inventory	$18,000	$30,000
Net purchases	$72,000	$120,000

Net sales: $110,000. No price changes or missing goods apply.

A $24,000

B $66,000

C $40,000

D $50,000

iClicker | Answer 2 of 5

Correct answer: A

For Sound Decision's August pool, what is estimated ending inventory at cost?

Sound Decision · August	Cost	Retail
Beginning inventory	$18,000	$30,000
Net purchases	$72,000	$120,000

Net sales: $110,000. No price changes or missing goods apply.

A **$24,000**
A is correct. Convert the unsold goods' retail value to cost.

B **$66,000**
Applies the ratio to sales, estimating COGS.

C **$40,000**
Leaves ending inventory at retail selling prices.

D **$50,000**
Subtracts ending retail value from available cost.

August retail estimate: Solution

Sound Decision · August	Cost	Retail
Beginning inventory	$18,000	$30,000
Net purchases	$72,000	$120,000

Net sales: $110,000. No price changes or missing goods apply.

Measure	Formula	Calculation	Result
COGAS	Beginning cost + Net purchases at cost	$18,000 + $72,000	$90,000
Available retail	Beginning retail + Net purchases at retail	$30,000 + $120,000	$150,000
Cost-to-retail ratio	$\frac{\text{Available cost}}{\text{Available retail}}$	$\frac{\$90,000}{\$150,000}$	**60%**
Ending inventory at retail	Available retail − Net sales	$150,000 − $110,000	**$40,000**
Estimated ending cost	Ending retail × Cost-to-retail ratio	$40,000 × 60%	**$24,000**

Cost flows within a retail pool

New case · May 2026: Sound Decision uses periodic calculations for a different product pool.

Assumptions: Retail prices stay unchanged; no returns, transfers, or missing goods apply.

$$\text{Cost-to-retail ratio} = \frac{\text{Cost}}{\text{Retail value}}$$

Ending retail = Available retail − Net sales

Source	Cost	Retail	Cost-to-retail ratio
Opening inventory	$24,000	$40,000	60%
May purchases	$60,000	$80,000	75%
Goods available	$84,000	$120,000	70%

Net sales are $60,000. Ending retail value is $120,000 − $60,000 = $60,000.

- **First-in, first-out (FIFO):** Assign opening costs to sales first.
- **Last-in, first-out (LIFO):** Assign current costs to sales first.

Average-cost and FIFO retail

Sound Decision · May continued	Cost	Retail	Cost-to-retail ratio
Opening inventory	$24,000	$40,000	60%
May purchases	$60,000	$80,000	75%
Goods available	$84,000	$120,000	70%

Net sales: $60,000.

Ending retail = Available retail – Net sales.
May ending retail: $120,000 − $60,000 = $60,000.

Average-cost: Use the whole pool

Combine opening inventory and purchases using the pool's 70% ratio.

Ending cost = Ending retail × Pool ratio

$60,000 × 70% = **$42,000**

FIFO: Use the newest purchase costs

FIFO assigns opening goods to sales first. The $60,000 remaining at retail fits within May's $80,000 of purchases.

Ending cost = Ending retail × Purchase ratio

$60,000 × 75% = **$45,000**

These are cost assignments, not claims about which physical goods customers bought.

LIFO retail: Retain the opening layer

Sound Decision · May continued	Cost	Retail	Cost-to-retail ratio
Opening inventory	$24,000	$40,000	60%
May purchases	$60,000	$80,000	75%
Goods available	$84,000	$120,000	70%

Net sales: $60,000.

Ending retail = Available retail – Net sales.
May ending retail: $120,000 − $60,000 = $60,000.

LIFO assigns the newest costs to sales first, leaving the opening layer plus part of May's purchases.

Layer cost = Remaining retail value × That layer's cost-to-retail ratio

Remaining layer	At retail	Cost ratio	At cost
Opening layer	$40,000	60%	$24,000
May layer	$60,000 − $40,000 = $20,000	75%	$15,000
Ending inventory	**$60,000**		**$39,000**

COGS = COGAS − Ending inventory.

If inventory shrinks, LIFO removes the newest retained layer first. Dollar-value LIFO retail separates price changes from quantity changes.

Markdowns under average-cost and conventional retail

Markdown: Reduce an established retail selling price. Acquisition cost stays unchanged.

Both methods: Calculate the same ending inventory at retail

Ending inventory at retail = Goods available at retail before markdowns − Markdowns − Net sales

Then convert that retail amount using different cost-to-retail ratios:

	Average-cost retail	Conventional retail
Cost-to-retail ratio	$\frac{\text{COGAS}}{\text{(Goods available at retail before markdowns − Markdowns)}}$	$\frac{\text{COGAS}}{\text{Goods available at retail before markdowns}}$
Treatment of markdowns	Include in the ratio denominator.	Exclude from the ratio denominator.
Result	Estimate ending inventory at cost.	Approximate lower of cost or market.

Estimated ending inventory = Ending inventory at retail × Cost-to-retail ratio

Assumptions: No other price changes or missing goods apply.

Method choice: Use one appropriate method consistently for each pool. A voluntary switch requires justification that the new method is preferable.

June markdown estimates: Practice

New case: Sound Decision, June 2026 retail pool. Only the stated markdowns change prices; no goods are missing.

Sound Decision · June	Amount
COGAS	$48,000
Goods available at retail before markdowns	$80,000
Permanent markdowns	$16,000
Net sales	$32,000

Calculate ending inventory at retail, each cost-to-retail ratio, and each estimated inventory amount.

Explain why the conventional result differs from the average-cost result.

June markdown estimates: Solution

Sound Decision · June	Cost	Retail before markdowns	Markdowns	Net sales
Goods available and activity	$48,000	$80,000	$16,000	$32,000

Both methods: Same ending inventory at retail

Ending inventory at retail = Goods available at retail before markdowns − Markdowns − Net sales

$80,000 − $16,000 − $32,000 = **$32,000** **at retail**

Different ratios produce different estimated inventory amounts:

Estimated ending inventory = Ending inventory at retail × Cost-to-retail ratio

	Average-cost retail	Conventional retail
Cost-to-retail ratio	$\frac{\$48,000}{(\$80,000 - \$16,000)} = 75\%$	$\frac{\$48,000}{\$80,000} = 60\%$
Estimated ending inventory	$32,000 × 75% = **$24,000**	$32,000 × 60% = **$19,200**

Conventional retail uses the lower ratio, so the same retail amount produces a lower inventory estimate.

Retail inventory and lower of cost or market

A **markdown** lowers the selling price. A **write-down** lowers the recorded inventory amount.

Under US generally accepted accounting principles (GAAP), retail-method inventory uses **lower of cost or market**, including FIFO retail.

Result obtained	What to check next
Average-cost or FIFO retail estimates cost.	Compare that cost with market using the replacement-cost limits reviewed in Chapter 17. Record a loss if market is lower.
Conventional retail can approximate lower of cost or market.	Check whether recorded markdowns reflect damage, obsolescence, and reduced selling prices. Inadequate markdowns can leave inventory overstated.

Market limits: Bound replacement cost by net realizable value above and net realizable value less normal profit below.

Recall: Net realizable value is expected selling price less reasonably predictable completion, disposal, and transportation costs.

ASC 330-10-20, 35-1C, and 35-7 govern these definitions and the retail-method measurement rule.

Checks for a retail inventory estimate

Record price changes and missing goods.

Unrecorded markdowns or shortages can overstate the retail balance remaining.

Group goods with suitable cost-to-retail relationships.

If goods with lower cost-to-retail ratios sell first, the original ratio may understate the remaining goods' cost.

Identify average-cost or conventional retail.

The methods treat markdowns differently in the ratio denominator.

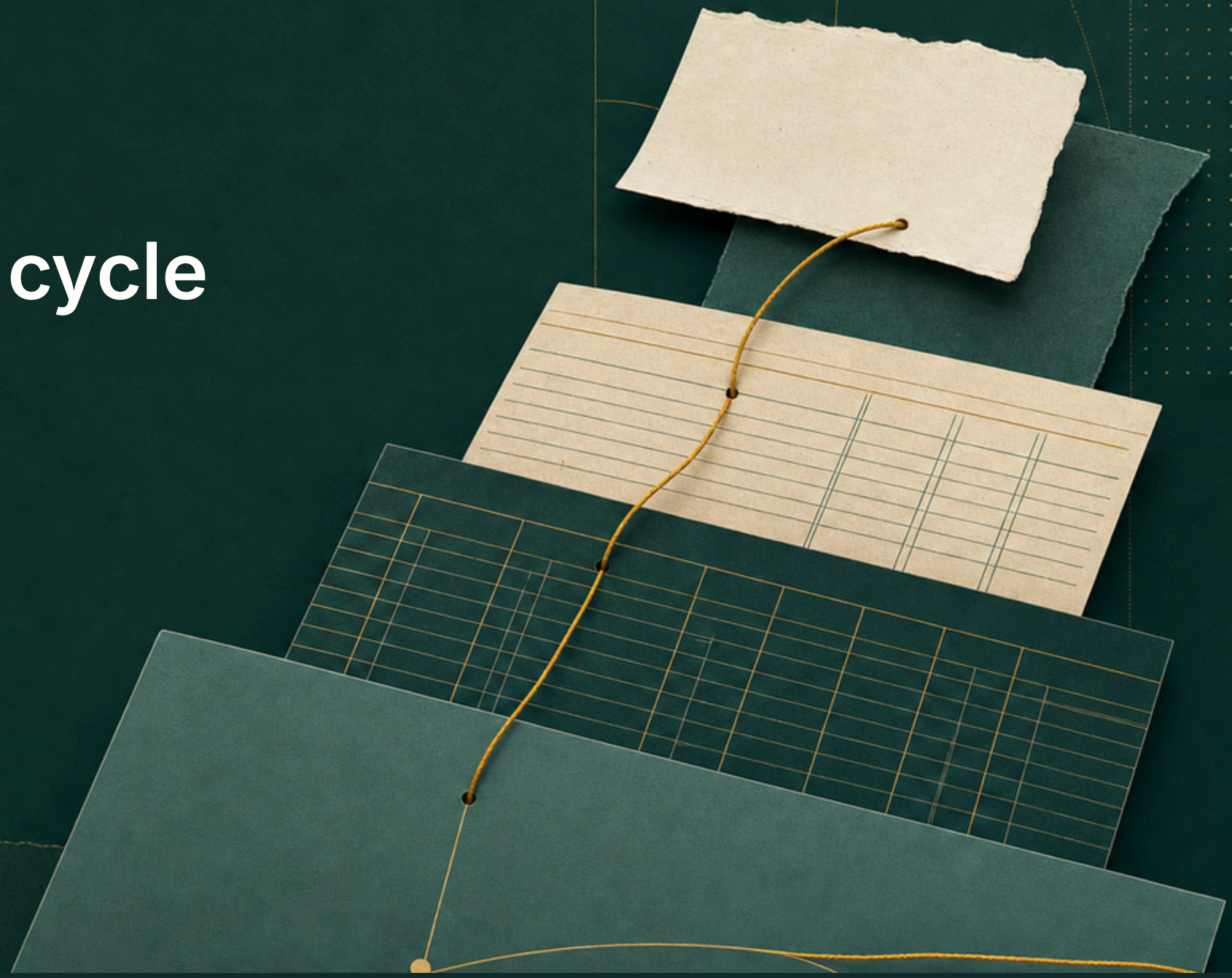
Reconcile quantities and assess lower of cost or market.

A correct ratio cannot detect every missing item or loss in value.

ASC 330-10-30-13 and 35-7 address retail-method procedures. The examples assume the stated pool and price conditions.

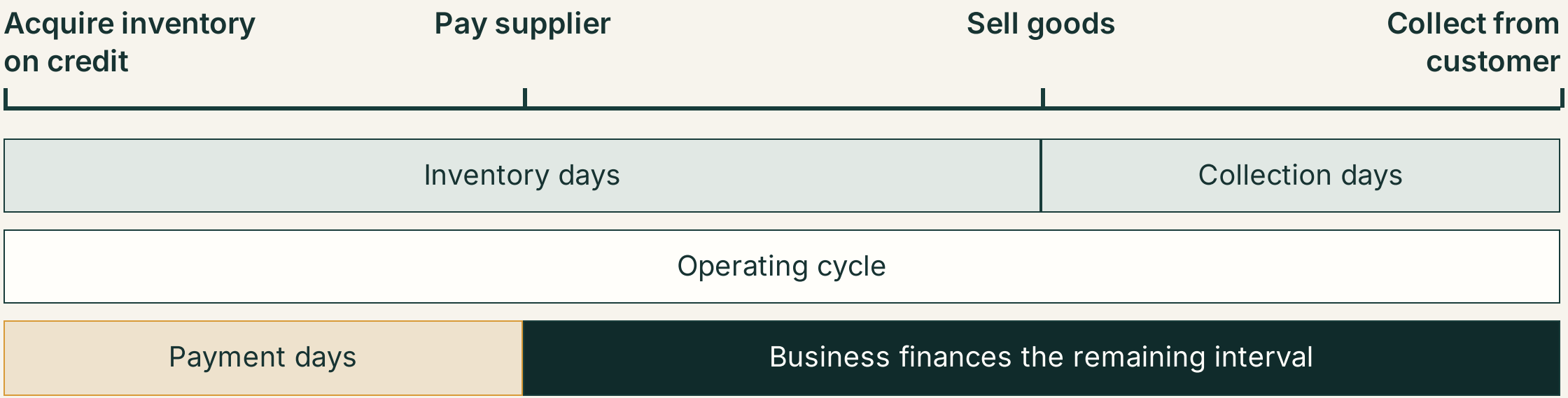
FLOWS

The operating cycle



Goods, customer collection, and supplier payment

From cost to timing: Managers estimate the goods remaining, then assess how long they must finance inventory and customer balances.



Operating cycle = Inventory days + Collection days

Supplier credit covers part of this interval. Payment days reduce the time the business must finance.

Illustrative sequence; supplier payment may occur before or after the sale. Spacing does not represent calculated days.

Turning balances into days

These measures estimate the average time spent holding inventory, collecting from customers, and paying suppliers.

Measure	Calculation	What it estimates
Collection days	$\frac{\text{Average net trade receivables}}{\text{Net credit sales per day}}$	Time from credit sale to collection
Inventory days	$\frac{\text{Average inventory at cost}}{\text{COGS per day}}$	Time from purchase to sale
Payment days	$\frac{\text{Average related trade payables}}{\text{Net credit inventory purchases per day}}$	Time from credit purchase to supplier payment

$$\textbf{Average balance} = \frac{\textbf{(Beginning balance + Ending balance)}}{\textbf{2}}$$

$$\textbf{Amount per day} = \frac{\textbf{Annual amount}}{\textbf{365}}$$

Use annual net credit sales, COGS, or net credit inventory purchases for the matching daily amount.

Receivable turnover and collection days

$$\text{Accounts receivable turnover} = \frac{\text{Net credit sales}}{\text{Average net trade receivables}}$$

Turnover measures how many times annual credit sales cover the average unpaid customer balance.

$$\text{Collection days} = \frac{\text{Average net trade receivables}}{\text{Net credit sales per day}}$$

Collection days express that balance as the average time from a credit sale to collection.

$$\text{Collection days} = \frac{365}{\text{Annual receivable turnover}}$$

Higher annual turnover means fewer collection days. Both calculations use the same sales and receivable balances.

Limit: These averages do not show the age of each unpaid invoice.

Sound Decision: 2026 operating records

New annual case: Sound Decision's company-wide records, separate from the earlier inventory-estimation examples.

Calculate collection days, inventory days, and payment days, then combine them to find the cash conversion cycle.

Annual case assumptions:

- All inventory purchases are on credit; trade balances match the sales or purchases.
- Receivables are net of credit-loss allowances; the allowance does not change.
- No other inventory movement applies.

2026 activity	Amount
Net credit sales	$657,000
Cash sales	$109,500
Cost of goods sold	$401,500
Total assets at year-end	$390,000

2026 balance	Beginning	Ending
Inventory	$48,000	$62,000
Net trade receivables	$61,000	$83,000
Trade payables	$35,000	$43,000

Collection measures: 2026 calculations

Sound Decision, 2026 (continued): Beginning net receivables $61,000; ending net receivables $83,000; net credit sales $657,000; 365 days.

Sound Decision, 2026	Formula	Calculation	Result
Average net receivables	$\frac{\text{(Beginning + Ending net receivables)}}{2}$	$\frac{(\$61{,}000 + \$83{,}000)}{2}$	$72,000
Receivable turnover	$\frac{\text{Net credit sales}}{\text{Average net receivables}}$	$\frac{\$657{,}000}{\$72{,}000}$	9.13 times
Net credit sales per day	$\frac{\text{Annual net credit sales}}{\text{Days in year}}$	$\frac{\$657{,}000}{365}$	$1,800
Collection days	$\frac{\text{Average net receivables}}{\text{Net credit sales per day}}$	$\frac{\$72{,}000}{\$1{,}800}$	**40.00 days**

Meaning: Average unpaid customer balances equal 40.00 days of credit sales at the year's average daily rate.

Check the cause: Longer days may reflect slower payment or changed credit terms; inspect customer aging before concluding.

Cash sales do not create trade receivables

$$\text{Collection days} = \frac{\text{Average net receivables}}{\text{Selected sales amount per day}}$$

Average net receivables: $72,000; period: 365 days.

Sound Decision also reports $109,500 of cash sales in 2026.

Sales basis	Sales amount per day	Collection days
Net credit sales	$\frac{\$657{,}000}{365}$	40.00
Total sales	$\frac{\$766{,}500}{365}$	34.29

- **Matching rule:** Cash sales do not create trade receivables.
- **Data limitation:** Label total sales as a proxy when credit sales are unavailable.

PAYMENT

Inventory and supplier payment



Turning balances into days

These measures estimate the average time spent holding inventory, collecting from customers, and paying suppliers.

Measure	Calculation	What it estimates
Collection days	$\frac{\text{Average net trade receivables}}{\text{Net credit sales per day}}$	Time from credit sale to collection
Inventory days	$\frac{\text{Average inventory at cost}}{\text{COGS per day}}$	Time from purchase to sale
Payment days	$\frac{\text{Average related trade payables}}{\text{Net credit inventory purchases per day}}$	Time from credit purchase to supplier payment

$$\textbf{Average balance} = \frac{\textbf{(Beginning balance + Ending balance)}}{\textbf{2}}$$

$$\textbf{Amount per day} = \frac{\textbf{Annual amount}}{\textbf{365}}$$

Use annual net credit sales, COGS, or net credit inventory purchases for the matching daily amount.

Inventory turnover and inventory days

Sound Decision, 2026 (continued): Beginning inventory $48,000; ending inventory $62,000; COGS $401,500; 365 days.

Measure	Formula	Calculation	Result
Average inventory	$\frac{\text{(Beginning + Ending balance)}}{2}$	$\frac{(\$48{,}000 + \$62{,}000)}{2}$	$55,000
Inventory turnover	$\frac{\text{COGS}}{\text{Average inventory}}$	$\frac{\$401{,}500}{\$55{,}000}$	7.30 times
COGS per day	$\frac{\text{Annual COGS}}{\text{Days in year}}$	$\frac{\$401{,}500}{365}$	$1,100
Inventory days	$\frac{\text{Average inventory}}{\text{COGS per day}}$	$\frac{\$55{,}000}{\$1{,}100}$	**50.00 days**

Meaning: Average inventory equals 50.00 days of cost of goods sold at the year's average rate.

Cost basis: Compare inventory cost with cost of goods sold, not with sales at selling prices.

Purchase adjustments for losses and production costs

Use beginning and ending inventory net of any inventory valuation allowance.

Retail purchases

= Reported cost of goods sold

\+ Losses excluded from that expense

\+ Ending net inventory

– Beginning net inventory

Additional fact	Adjustment
A loss or write-down is already in cost of goods sold.	Do not add it again.
A loss or write-down is reported separately.	Add it to the reconciliation.

Materials purchases:

- Start with COGS and add losses excluded from COGS.
- Add increases or subtract decreases in **raw materials, work in process, and finished goods**.
- Subtract production labor and overhead **added to inventory**.

Turning balances into days

These measures estimate the average time spent holding inventory, collecting from customers, and paying suppliers.

Measure	Calculation	What it estimates
Collection days	$\frac{\text{Average net trade receivables}}{\text{Net credit sales per day}}$	Time from credit sale to collection
Inventory days	$\frac{\text{Average inventory at cost}}{\text{COGS per day}}$	Time from purchase to sale
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$$\textbf{Average balance} = \frac{\textbf{(Beginning balance + Ending balance)}}{\textbf{2}}$$

$$\textbf{Amount per day} = \frac{\textbf{Annual amount}}{\textbf{365}}$$

Use annual net credit sales, COGS, or net credit inventory purchases for the matching daily amount.

Payable turnover and payment days

Sound Decision, 2026 (continued): Beginning trade payables $35,000; ending trade payables $43,000; credit purchases $415,500; 365 days.

Measure	Formula	Calculation	Result
Average trade payables	$\frac{\text{(Beginning + Ending balance)}}{2}$	$\frac{(\$35{,}000 + \$43{,}000)}{2}$	$39,000
Payable turnover	$\frac{\text{Credit purchases}}{\text{Average trade payables}}$	$\frac{\$415{,}500}{\$39{,}000}$	10.65 times
Credit purchases per day	$\frac{\text{Annual net credit inventory purchases}}{\text{Days in year}}$	$\frac{\$415{,}500}{365}$	$1,138.36
Payment days	$\frac{\text{Average trade payables}}{\text{Net credit inventory purchases per day}}$	$\frac{\$39{,}000}{\$1{,}138.36}$	**34.26 days**

Meaning: Average unpaid supplier balances equal 34.26 days of credit purchases at the year's average rate.

Use the unrounded daily purchases amount; round the final days result.

iClicker | Question 3 of 5

A company reports the following amounts. Use 365 days.

Average trade payables: **$60,000**. Annual net credit inventory purchases: **$730,000**. Annual COGS: **$657,000**.

What are payment days?

A 12.17 days.

B 33.33 days.

C 0.08 days.

D 30.00 days.

iClicker | Answer 3 of 5

Correct answer: D

A company reports the following amounts. Use 365 days.

Average trade payables: **$60,000**. Annual net credit inventory purchases: **$730,000**. Annual COGS: **$657,000**.

What are payment days?

A **12.17 days.**
This is payable turnover, measured in times per year.

B **33.33 days.**
This uses COGS instead of credit purchases.

C **0.08 days.**
This divides by annual purchases without converting to a daily amount.

D **30.00 days.**

D is correct. Credit purchases per day = $\frac{\$730{,}000}{365}$ = $2,000. Payment days = $\frac{\$60{,}000}{\$2{,}000}$ = 30.00 days.

COGS as a proxy for credit purchases

Common convention: Analysts often calculate payment days using COGS when credit purchases are unavailable. Credit purchases match supplier payables more directly.

Sound Decision, 2026: Internal records confirm all purchases were on credit, with no other inventory changes. Assume an outside analyst does not know those facts.

Basis	Payment-days calculation	Result
Internal credit-purchase records	$\frac{\text{Average trade payables}}{\text{Credit purchases per day}} = \frac{\$39{,}000}{\$1{,}138.36}$	34.26 days
COGS convention	$\frac{\text{Average trade payables}}{\text{COGS per day}} = \frac{\$39{,}000}{\$1{,}100}$	35.45 days

- **Why results differ here:** Inventory increased, so purchases exceeded COGS.
- **Before comparing companies or years:** Check whether payment days use credit purchases or COGS.
- **Public-data limit:** Without details about cash versus credit purchases and other inventory changes, the analyst cannot measure this difference.

Use unrounded daily amounts. The COGS convention appears in APQC benchmarking and ACCA financial-analysis guidance.

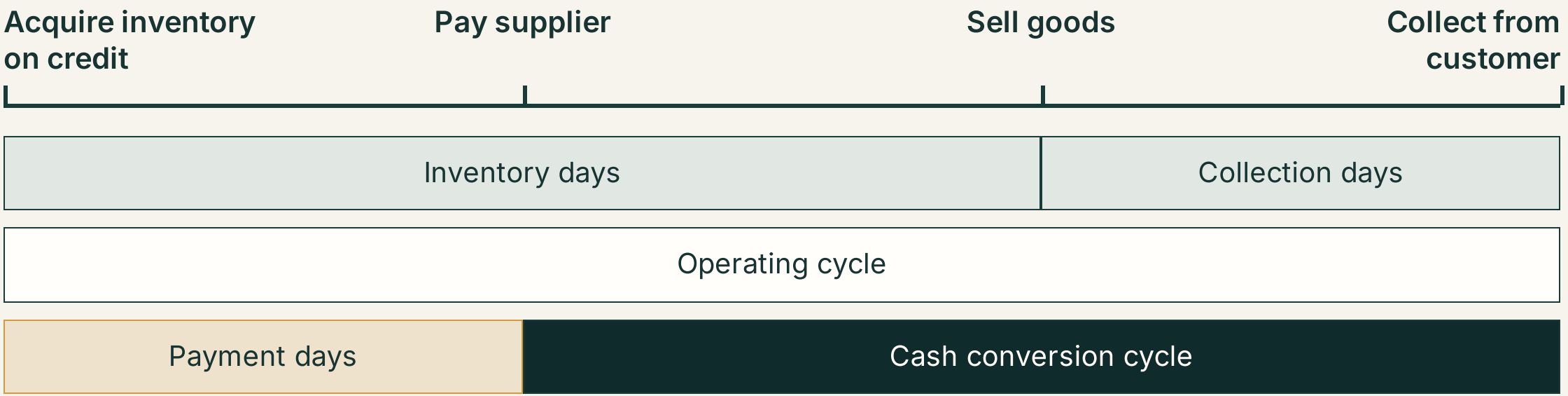
SYNTHESIS

The cash conversion cycle



SYNTHESIS

Operating cycle and cash conversion cycle



Operating cycle = Inventory days + Collection days

Cash conversion cycle = Inventory days + Collection days − Payment days

Supplier credit finances part of the operating cycle, so subtract payment days.

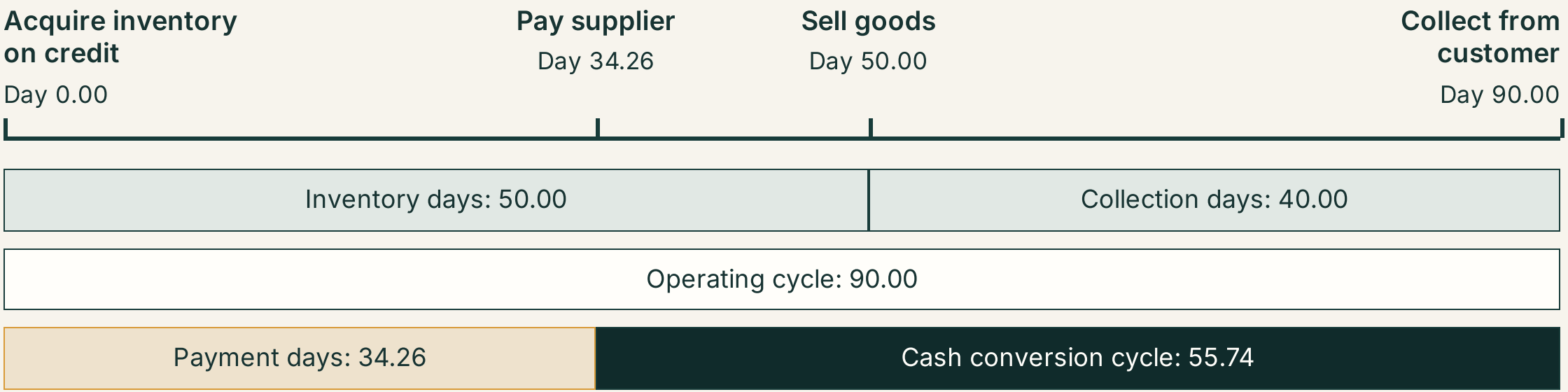
Illustrative timing; supplier payment may occur before or after the sale. Use unrounded components when calculating the cycle.

SYNTHESIS

Sound Decision finances a 56-day cash gap

Cash conversion cycle = Inventory days + Collection days − Payment days

Sound Decision, 2026: approximate timing from the annual averages.



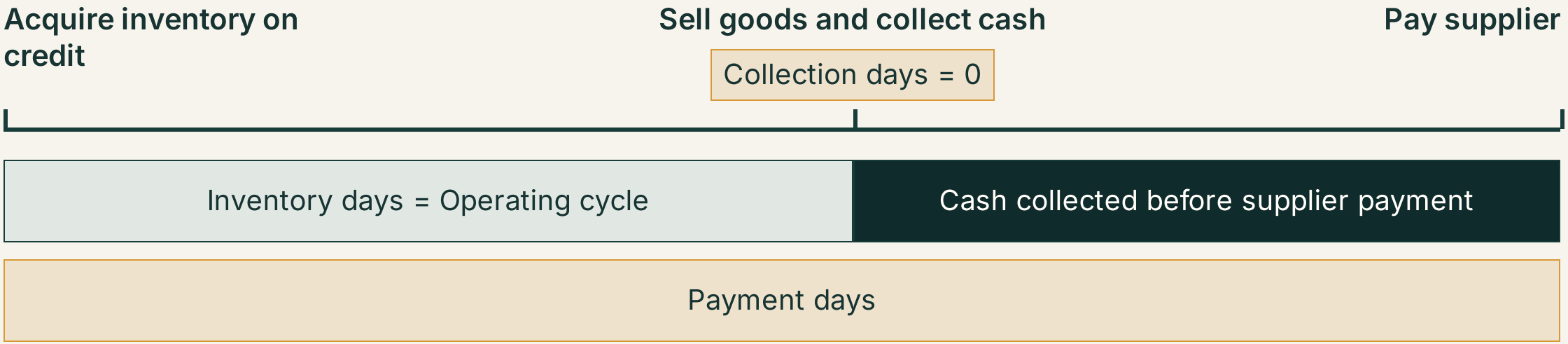
Cash conversion cycle = 50.00 + 40.00 − 34.26 = 55.74 days.

Meaning: The business finances an estimated 55.74-day interval between paying suppliers and collecting from customers.

Limits: The diagram illustrates average timing, not actual invoice dates. Payroll, capital spending, debt service, and taxes require separate cash forecasts.

A negative cash conversion cycle

Sound Decision: Hypothetical cash-only sales. Customers pay at the sale, so **collection days = 0**.



Operating cycle = Inventory days + 0 collection days = Inventory days

Cash conversion cycle = Inventory days – Payment days < 0

The operating cycle ends at the sale because cash is collected immediately. Supplier payment occurs later.

A negative cycle does not establish cash reserves or overall liquidity. Inspect supplier terms and overdue invoices before judging the result.

2027 cash conversion cycle: Practice

Spend about 5 minutes working on your own or with those around you.

Sound Decision, 2027. All inventory purchases are on credit; no inventory losses or other adjustments apply. Use 365 days.

Account	Beginning	Ending
Net receivables	$83,000	$133,000
Inventory	$62,000	$70,000
Trade payables	$43,000	$55,000

Annual credit sales: $788,400. COGS: $481,800.

Calculate **credit purchases, collection days, inventory days, payment days, and the cash conversion cycle**. Keep intermediate results unrounded.

iClicker | Question 4 of 5

What is Sound Decision’s 2027 cash conversion cycle, in days?

Use your results from the preceding activity and unrounded intermediate amounts.

A 136.51 days

B 63.49 days

C 100.00 days

D 62.88 days

iClicker | Answer 4 of 5

Correct answer: B

What is Sound Decision’s 2027 cash conversion cycle, in days?

Use your results from the preceding activity and unrounded intermediate amounts.

A **136.51 days**
Adds payment days instead of subtracting them.

B **63.49 days**
B is correct. The cash conversion cycle is 63.49 days: inventory days + collection days − payment days.

C **100.00 days**
Gives the operating cycle without subtracting payment days.

D **62.88 days**
Uses COGS instead of credit purchases for payment days.

SYNTHESIS

Sound Decision, 2027: Worked solution

Sound Decision, 2027	Beginning	Ending	Annual amount
Net receivables	$83,000	$133,000	Credit sales: $788,400
Inventory	$62,000	$70,000	COGS: $481,800
Trade payables	$43,000	$55,000	All purchases on credit; 365 days

Credit purchases = COGS + Ending inventory − Beginning inventory
$481,800 + $70,000 − $62,000 = **$489,800** (no other inventory changes).

Requested measure	Average balance	Annual amount per day	$\frac{\text{Average balance}}{\text{Amount per day}}$	Answer
Collection days	$\frac{\$83,000 + \$133,000}{2} = \$108,000$	$\frac{\$788,400}{365} = \$2,160.00$	$\frac{\$108,000}{\$2,160.00}$	**50.00 days**
Inventory days	$\frac{\$62,000 + \$70,000}{2} = \$66,000$	$\frac{\$481,800}{365} = \$1,320.00$	$\frac{\$66,000}{\$1,320.00}$	**50.00 days**
Payment days	$\frac{\$43,000 + \$55,000}{2} = \$49,000$	$\frac{\$489,800}{365} = \$1,341.92$	$\frac{\$49,000}{\$1,341.92}$	**36.51 days**

Cash conversion cycle = Inventory days + Collection days − Payment days
50.00 + 50.00 − 36.51 = **63.49 days** (using unrounded components).

The change in the cash conversion cycle

Sound Decision: Component change = 2027 days − 2026 days

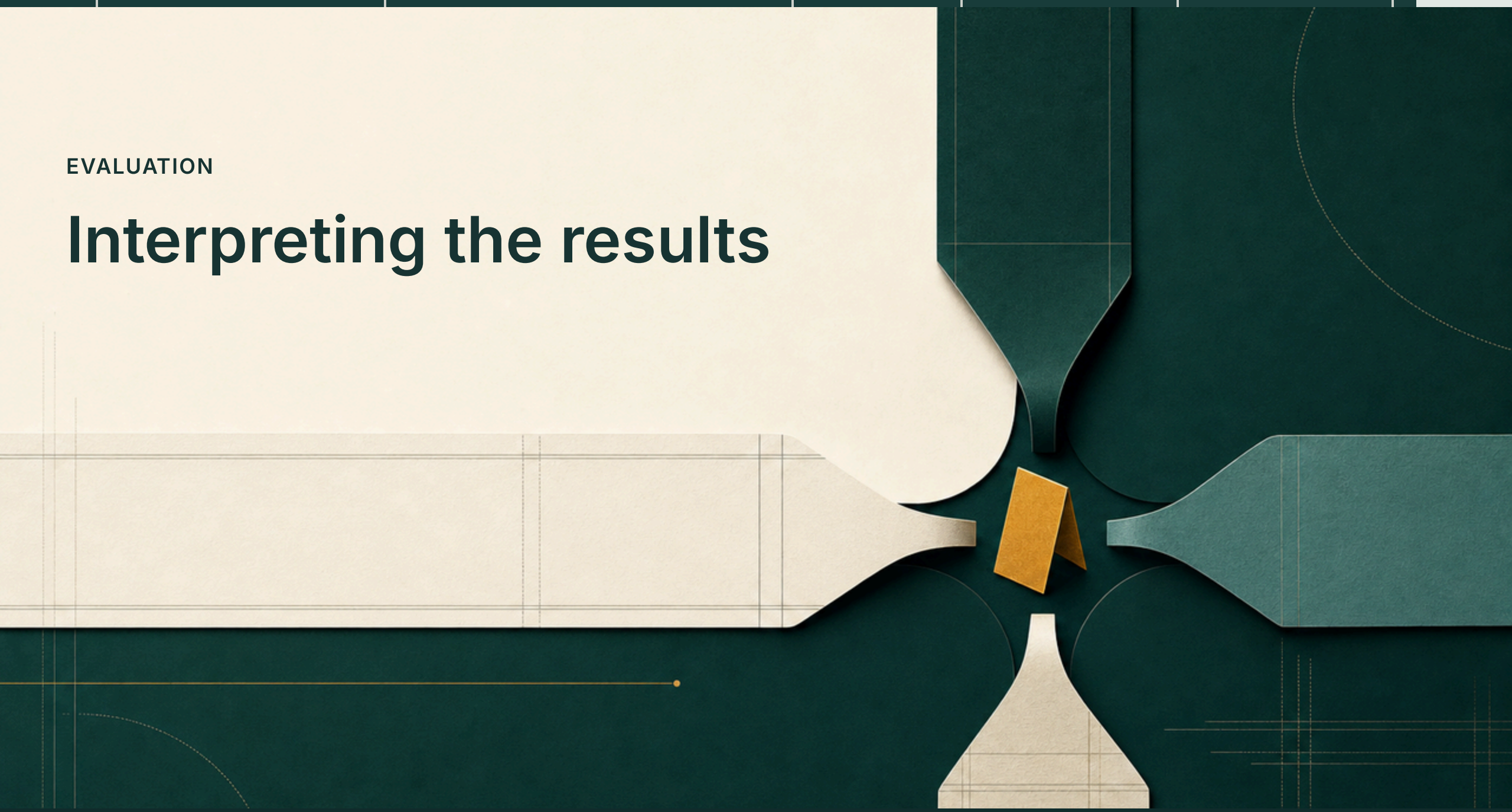
Cycle change = Change in inventory days + Change in collection days − Change in payment days

Component	2026 days	2027 days	Change
Collection	40.00	50.00	10.00
Inventory	50.00	50.00	0.00
Payment	34.26	36.51	2.25
Cash conversion cycle	**55.74**	63.49	7.75

- **Collection:** Longer collection adds to the cycle.
- **Payment:** Longer payment partly offsets that increase.
- **Follow-up:** Investigate the operating cause of each component change.

EVALUATION

Interpreting the results



EVALUATION

Interpreting a shorter cash conversion cycle

A shorter cycle may reflect:

Faster collection or tighter customer credit	Faster inventory sales or stockouts	Longer supplier terms or overdue payments
Inspect customer aging and credit terms.	Inspect sales and product availability.	Inspect purchase terms and overdue invoices.

Cash shortfall decision: Use a cash forecast. Include other receipts, expenses, financing, and investment payments.

iClicker | Question 5 of 5

A company's collection days fall by 6 days, inventory days rise by 4 days, and payment days fall by 3 days.

How does its cash conversion cycle change?

A Decreases by 5 days.

B Decreases by 1 day.

C Increases by 1 day.

D Increases by 7 days.

iClicker | Answer 5 of 5

Correct answer: C

A company's collection days fall by 6 days, inventory days rise by 4 days, and payment days fall by 3 days.

How does its cash conversion cycle change?

A **Decreases by 5 days.**
Adds the payment-days change instead of subtracting it.

B **Decreases by 1 day.**
Reverses the direction of the net change.

C **Increases by 1 day.**
C is correct. Change in cycle = Change in inventory days + Change in collection days − Change in payment days = 4 − 6 − (−3) = +1 day. Paying suppliers sooner lengthens the cash gap.

D **Increases by 7 days.**
Omits the improvement in collection days.

NEXT MEETING

Next class: Long-lived asset acquisition and capitalized cost

Thursday, November 12, 2026

Unit 5 review assignment due:
Sunday, November 15, at 11:59 PM.

