ACC 300 · SESSION 13

Direct operating cash flows and cash-flow analysis



Today's cash-flow topics

- Present operating cash receipts and payments using the direct method.
- Compare revenue, cash receipts, and payment deadlines.
- Assess whether operating cash keeps pace with profit.
- Calculate free cash flow and assess cash needed for other payments.

DIRECT OPERATING PRESENTATION

Prepare the direct operating section

Report cash received from customers and cash paid for operating costs.



Operating receipts and payments

Net operating cash is the amount left after operating payments are subtracted from operating receipts. The total alone does not tell us how much customers paid or how much the company paid suppliers.

The **direct method** reports major operating cash receipts and payments separately. We can use those amounts to identify the sources and uses of operating cash.

Operating receipts

- Customers pay for goods and services.
- The company receives interest or dividends.
- Other operating receipts appear separately when present.

Operating payments

- The company pays employees and suppliers.
- The company pays interest and income taxes.
- Other operating payments appear separately when present.

Sources of customer cash receipts

Add the cash received from these sources during the reporting period:

Cash sales

Customers pay immediately for goods or services.

+

Collections of A/R

Customers pay amounts they already owed.

+

Customer advances

Customers pay before receiving goods or services, including when they buy gift cards.

Cash received from customers

iClicker | Question 1 of 5

A store reports cash sales of $80,000, credit sales of $50,000, collections of $30,000, and customer advances of $10,000. There are no refunds. How much cash did customers pay?

A $80,000

B $110,000

C $120,000

D $130,000

Cash received from customers: answer

iClicker | Answer 1 of 5 — **Correct answer: C.**

A store reports cash sales of $80,000, credit sales of $50,000, collections of $30,000, and customer advances of $10,000. There are no refunds. How much cash did customers pay?

A **$80,000**
Incorrect. This includes only cash sales.

B **$110,000**
Incorrect. This omits customer advances.

C **$120,000**
Correct. Add cash sales, collections, and advances: $80,000 + $30,000 + $10,000 = $120,000. Credit sales are not cash receipts.

D **$130,000**
Incorrect. This adds cash and credit sales rather than cash received.

Cash collected on receivables

Zoomies began 2026 with $40,000 of gross receivables and ended with $30,000. During the year, it made $137,000 of credit sales and wrote off $4,000.

How much cash did Zoomies collect on receivables? Write-offs reduce the account without a cash receipt.

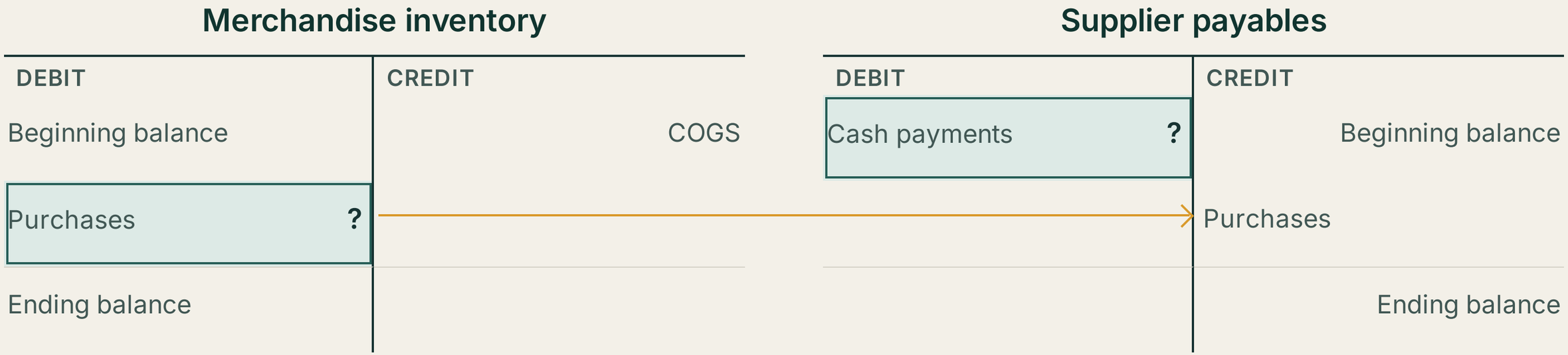
Zoomies Pet Store | Year ended December 31, 2026

Gross accounts receivable

DEBIT		CREDIT	
Beginning balance	**$40,000**	**$143,000**	Collections
Credit sales	**$137,000**	**$4,000**	Write-offs
Ending balance	**$30,000**		

From inventory purchases to supplier payments

A company can buy merchandise, sell it, and pay its supplier in different periods. We need both inventory and supplier payables to find cash paid.



Purchases add inventory and the amount owed to suppliers. Payments reduce that amount owed.

Calculate cash paid to suppliers

Work on your own or with those around you. Find Zoomies' 2026 merchandise purchases, then its cash payments to suppliers.

Given amount	Amount
Cost of goods sold	$190,000
Inventory, January 1	$50,000
Inventory, December 31	$62,000
Supplier payables, January 1	$28,000
Supplier payables, December 31	$35,000

All purchases are on account. Only purchases, sales, and supplier payments change these accounts.

Cash paid to merchandise suppliers

Use the balances and cost of goods sold from the preceding exercise. All merchandise purchases are on account.

Zoomies | Year ended December 31, 2026

Merchandise inventory

DEBIT		CREDIT	
Beginning balance	$50,000	$190,000	COGS
Purchases	$202,000		
Ending balance	$62,000		

Accounts payable to merchandise suppliers

DEBIT		CREDIT	
Payments	$195,000	$28,000	Beginning balance
		$202,000	Purchases
		$35,000	Ending balance

Expense timing and cash payments

An expense measures resources used during the period. Operating cash payments depend on when the company pays for those resources.

Expense before payment

- Some current expense remains unpaid.
- Current payments may settle earlier expenses.
- The related payable records what the company still owes.

Wages, utilities, interest, and taxes often follow this pattern.

Payment before expense

- Some current expense uses resources paid for earlier.
- Current payments may buy resources for future use.
- The related prepaid asset records what remains available to use.

Insurance, rent, and supplies often follow this pattern.

No current cash payment Depreciation has no current cash payment, so it receives no payment line in the direct section.

Zoomies' total customer receipts

Zoomies | Year ended December 31, 2026

We have found the collections on credit sales. Add those collections to cash sales and new gift card sales to find all customer receipts.

Source of customer cash	Amount received
Cash sales	180,000
Collections of accounts receivable	143,000
New gift card sales	24,000
Total customer receipts	**347,000**

Other gift card activity

- Gift card redemptions of $25,000 use amounts paid earlier, so they add no new customer receipt.
- Show the $2,000 cash refunds separately as an operating payment.

Cash payments for accrued expenses

Zoomies | Year ended December 31, 2026

Each payable includes earlier unpaid bills and current expense. Cash payments reduce what Zoomies owes; the ending balance remains unpaid.

Utilities payable

DEBIT		CREDIT	
		$500	Beginning balance
Cash paid	**$5,500**	**$6,000**	Expense
		$1,000	Ending balance

Interest payable

DEBIT		CREDIT	
		$2,000	Beginning balance
Cash paid	**$6,000**	**$5,000**	Expense
		$1,000	Ending balance

Income taxes payable

DEBIT		CREDIT	
		$3,000	Beginning balance
Cash paid	**$6,000**	**$7,000**	Expense
		$4,000	Ending balance

Zoomies' cash payment for supplies

Zoomies | Year ended December 31, 2026

Zoomies needed enough supplies for what it used and what remained at year-end. Opening supplies met part of that need before any new purchase.

Supplies

DEBIT		CREDIT	
Beginning balance	**$1,000**		
Cash purchases	**$6,000**	**$5,000**	Supplies used
Ending balance	**$2,000**		

Zoomies paid for all new supplies in cash, so purchases equal cash paid.

Cash paid for supplies

iClicker | Question 2 of 5

A store used $6,000 of supplies. Supplies on hand were $2,000 at the start and $1,500 at the end. All purchases were paid in cash. How much cash did it pay for supplies?

A $5,500

B $6,500

C $7,500

D $6,000

Cash paid for supplies: answer

iClicker | Answer 2 of 5 — **Correct answer: A.**

A store used $6,000 of supplies. Supplies on hand were $2,000 at the start and $1,500 at the end. All purchases were paid in cash. How much cash did it pay for supplies?

A **$5,500**
Correct. Cash paid = supplies used + ending supplies - beginning supplies: $6,000 + $1,500 - $2,000 = $5,500. Opening supplies met part of the year's needs.

B **$6,500**
Incorrect. This reverses the treatment of opening and ending supplies.

C **$7,500**
Incorrect. This ignores the supplies already available at the start.

D **$6,000**
Incorrect. This treats supplies used as the cash purchase amount.

Zoomies' direct operating section

During 2026, Zoomies paid $58,000 for wages, $14,000 for insurance, and $18,000 for rent.

Zoomies | Year ended December 31, 2026

Operating cash flow	Amount
Customer receipts	347,000
Refunds of unused gift cards	(2,000)
Payments to merchandise suppliers	(195,000)
Payments to employees	(58,000)
Insurance payments	(14,000)
Store supplies payments	(6,000)
Utility payments	(5,500)
Rent payments	(18,000)
Interest payments	(6,000)
Income tax payments	(6,000)
Net cash provided by operating activities	**36,500**

The direct method also requires a reconciliation

A business using the direct method must also provide a separate reconciliation of net income to operating cash. It uses the same adjustments we learned last class.

Zoomies | Year ended December 31, 2026

Direct operating section

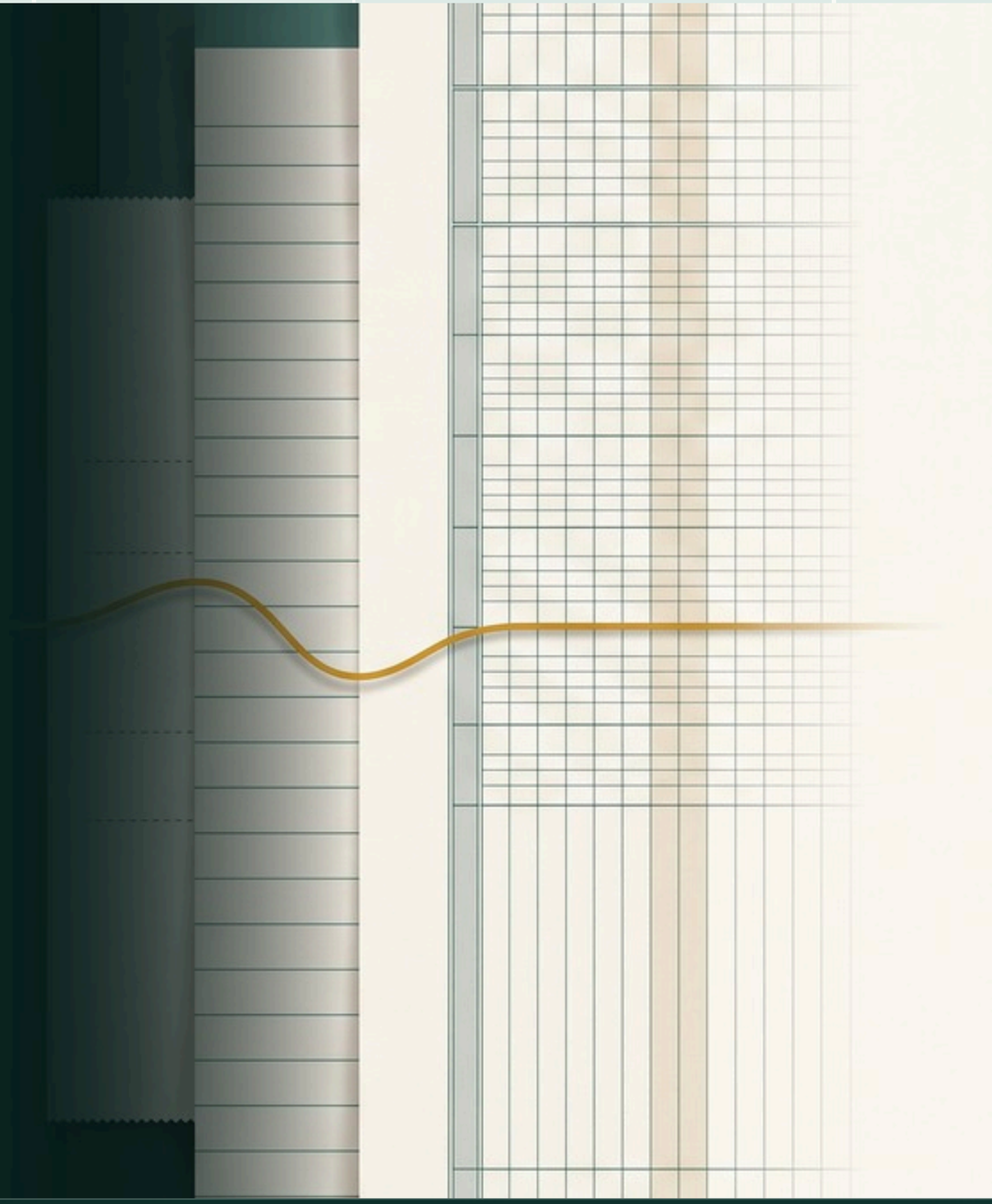
Receipts and payments	Amount
Customer receipts	347,000
Gift card refunds	(2,000)
Merchandise suppliers	(195,000)
Employees	(58,000)
Insurance	(14,000)
Supplies	(6,000)
Utilities	(5,500)
Rent	(18,000)
Interest	(6,000)
Income taxes	(6,000)
Operating cash	**36,500**

Separate net income reconciliation

Net income and adjustments	Amount
Net income	17,000
Depreciation	16,000
Loss on van sale	3,000
Credit loss expense	3,000
Receivables decrease, excluding write-offs	6,000
Gift card liability decrease	(3,000)
Inventory increase	(12,000)
Supplier payables increase	7,000
Supplies increase	(1,000)
Utilities payable increase	500
Interest payable decrease	(1,000)
Income taxes payable increase	1,000
Operating cash	**36,500**

Sales and collection timing

Separate earning revenue, receiving cash, and collecting by the agreed due date.



Revenue timing and cash receipts

Revenue is earned when the company provides goods or services. For these merchandise sales, that occurs when control of the goods passes to the customer.

Customer receipts occur when cash arrives, which may be before, at, or after the sale.

Sequence		Balance between the events
The company earns revenue before receiving cash.	→	A receivable records what the customer owes.
The customer pays before revenue is earned.	→	An advance liability records what the company owes the customer.
The company earns revenue and receives cash together.	→	No receivable or advance remains for that amount.

A split payment can include an advance and a later collection. Record each receipt once and revenue when earned.

Cash timing and payment deadlines

Reporting period

Which period includes the cash receipt?

Compare the collection date with **the end of the reporting period**.

Payment deadline

Did the customer pay early, on time, or late?

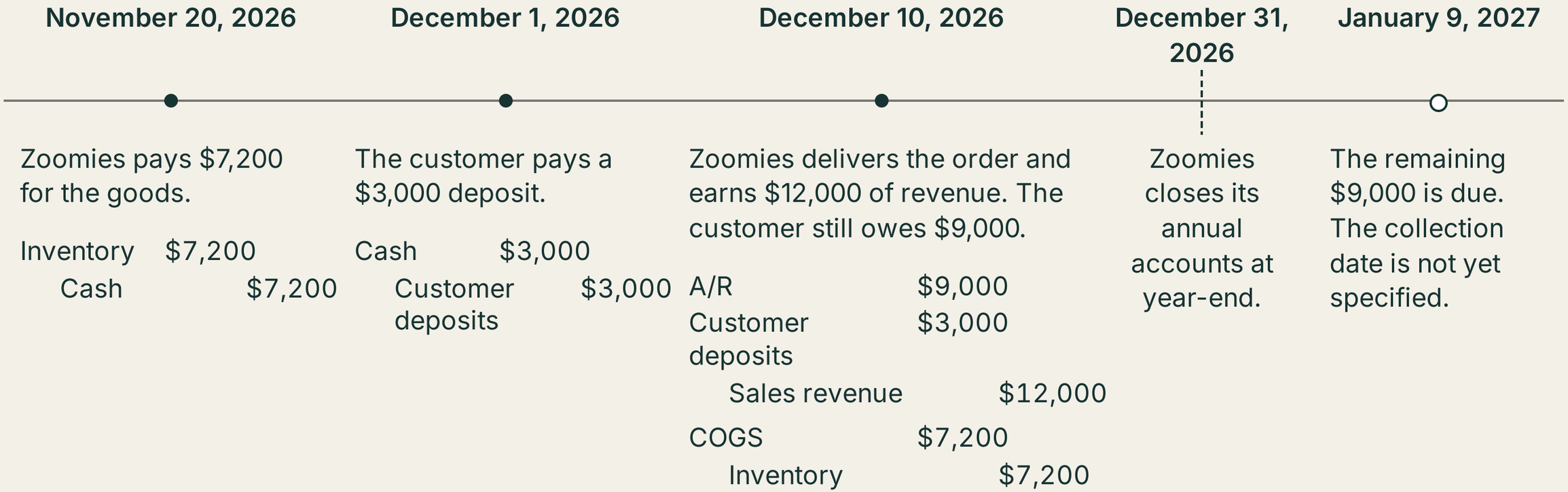
Compare the collection date with **the agreed due date**.

An amount owed at period-end is overdue only if the payment deadline has passed.

One Zoomies order across year-end

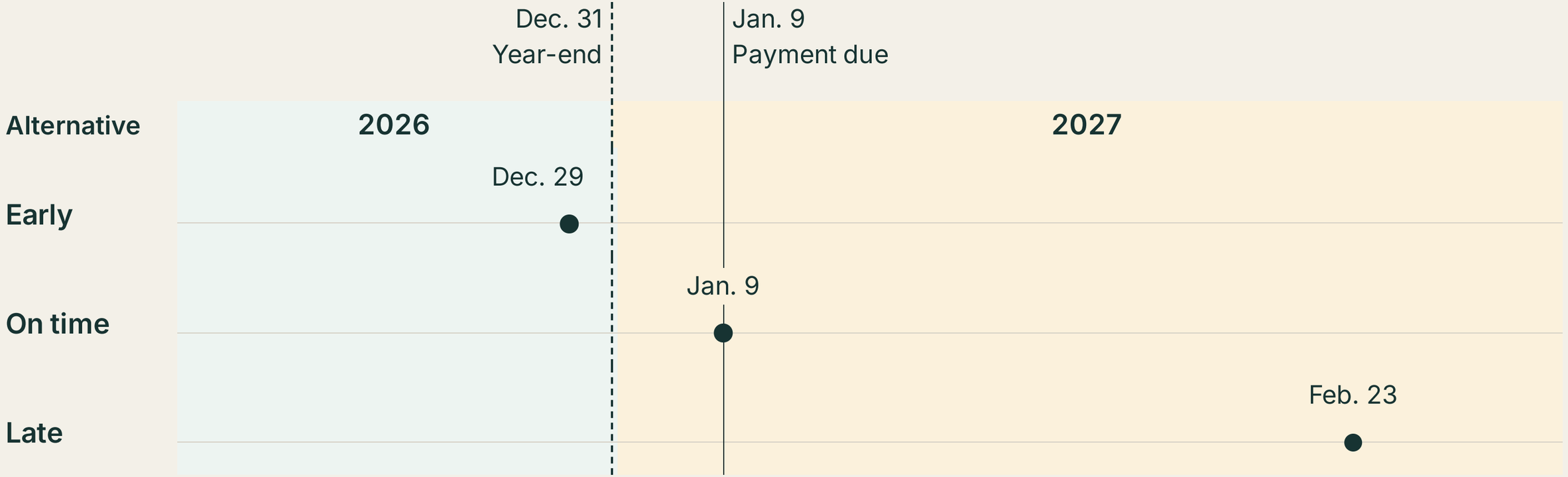
A customer orders $12,000 of goods from Zoomies. The customer pays a $3,000 deposit before delivery and owes the remaining $9,000 by January 9, 2027.

We will analyze this one order separately from Zoomies' annual statement.



Early, on-time, and late collections

Compare three alternative dates for collecting the remaining $9,000. Keep all other order details unchanged.



Collection timing across two years

Effects of the separate Zoomies order | No taxes or other transactions

Amount	Early collection		On-time or late collection	
	2026	2027	2026	2027
Revenue	12,000	0	12,000	0
Cost of goods sold	(7,200)	0	(7,200)	0
Gross profit	**4,800**	**0**	**4,800**	**0**
Customer receipts	12,000	0	3,000	9,000
Inventory payment	(7,200)	0	(7,200)	0
Net operating cash	**4,800**	**0**	**(4,200)**	**9,000**
Ending receivable	0	0	9,000	0

Across both years, every alternative produces $12,000 revenue and $4,800 net operating cash.

Profit and receipts across year-end

iClicker | Question 3 of 5

A store delivers goods on December 28, 2026, for $8,000. Their cost is $5,000. The customer pays the full balance on January 20, 2027. What are 2026 gross profit and customer receipts for this sale?

A Gross profit $0; receipts $0.

B Gross profit $3,000; receipts $0.

C Gross profit $3,000; receipts $8,000.

D Gross profit $8,000; receipts $0.

Profit and receipts across year-end: answer

iClicker | Answer 3 of 5 — **Correct answer: B.**

A store delivers goods on December 28, 2026, for $8,000. Their cost is $5,000. The customer pays the full balance on January 20, 2027. What are 2026 gross profit and customer receipts for this sale?

A **Gross profit $0; receipts $0.**
Incorrect. Delivery creates revenue and cost of goods sold in 2026, even before collection.

B **Gross profit $3,000; receipts $0.**
Correct. Gross profit is $8,000 - $5,000 = $3,000. The receipt belongs to 2027.

C **Gross profit $3,000; receipts $8,000.**
Incorrect. The profit is correct, but the customer has not paid during 2026.

D **Gross profit $8,000; receipts $0.**
Incorrect. This reports revenue as gross profit without subtracting cost of goods sold.

Late collections delay cash availability

Zoomies needs to know when cash will arrive to plan its own payments. Annual cash totals cannot tell us whether a customer met the agreed deadline.

Both later alternatives produce $9,000 of customer receipts during 2027.

Collection	Days after the January 9 due date	Consequence
January 9	0	Zoomies receives the balance when promised.
February 23	45	Zoomies waits longer for cash it expected in January.

Why receivables increase

Receivables increase when **credit sales exceed collections plus other reductions**, such as write-offs.

Some possible explanations:

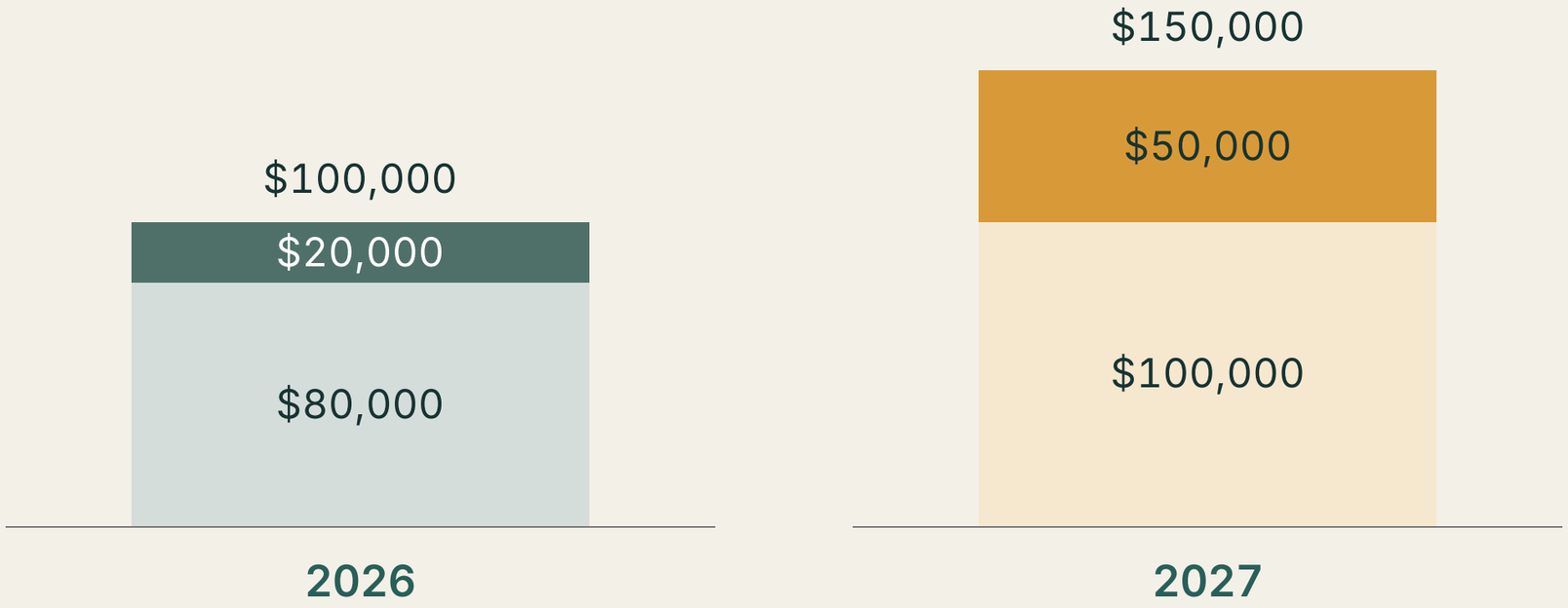
- Higher sales volume or prices.
- More customers buy on credit rather than paying cash.
- More credit sales occur near period-end, including seasonal sales.
- The company gives customers longer payment terms.
- Customers pay later than agreed.

More sales can increase receivables

Customers have 30 days to pay. All receivables shown below are still within their payment terms.

Collected by December 31 Uncollected at December 31

December credit sales



Longer payment terms and late collections

When customers take longer to pay, more credit sales can remain in receivables at year-end.

Longer agreed payment terms

Customers have more time to pay, so receivables can remain outstanding longer. Amounts still within the agreed terms are not overdue.

Missed payment deadlines

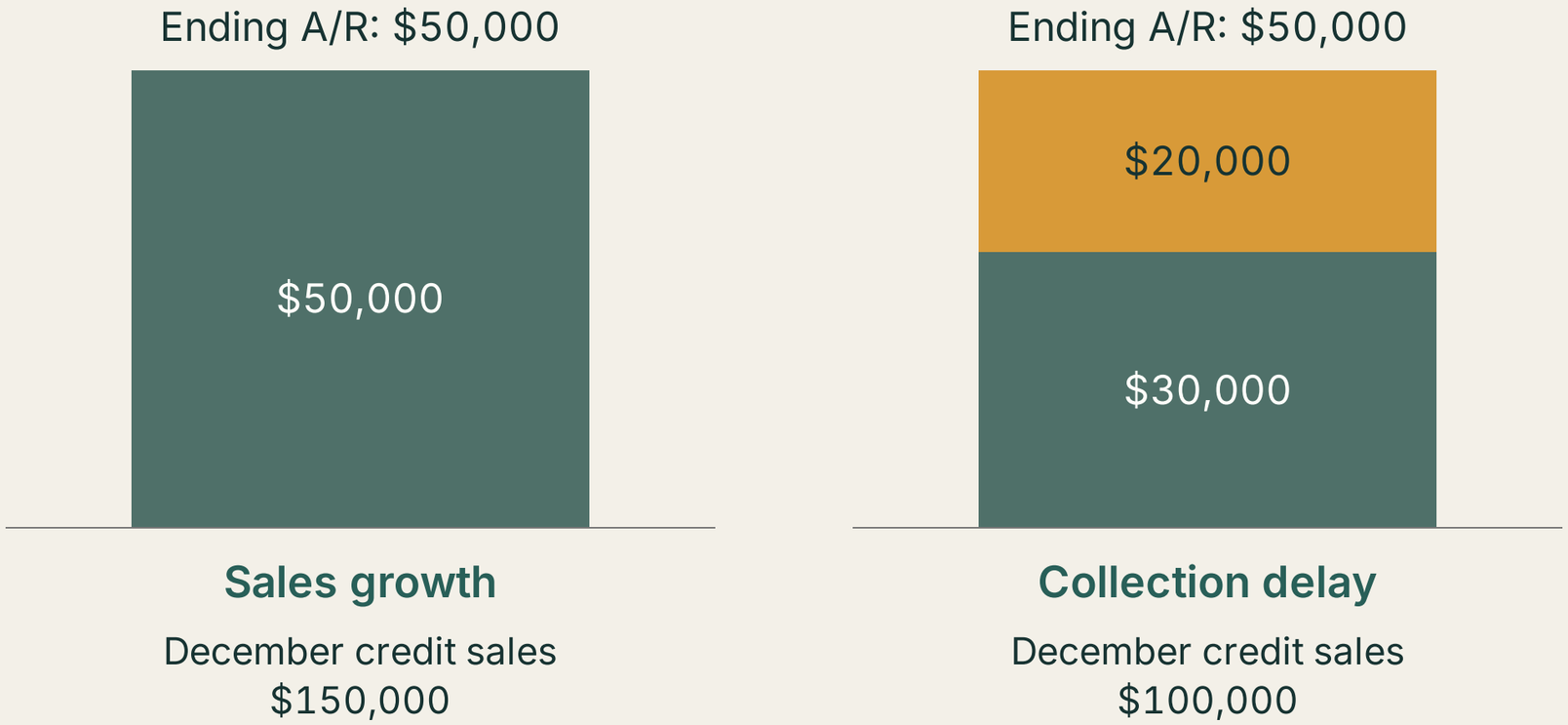
The overdue receivables include payments the company expected to have received.

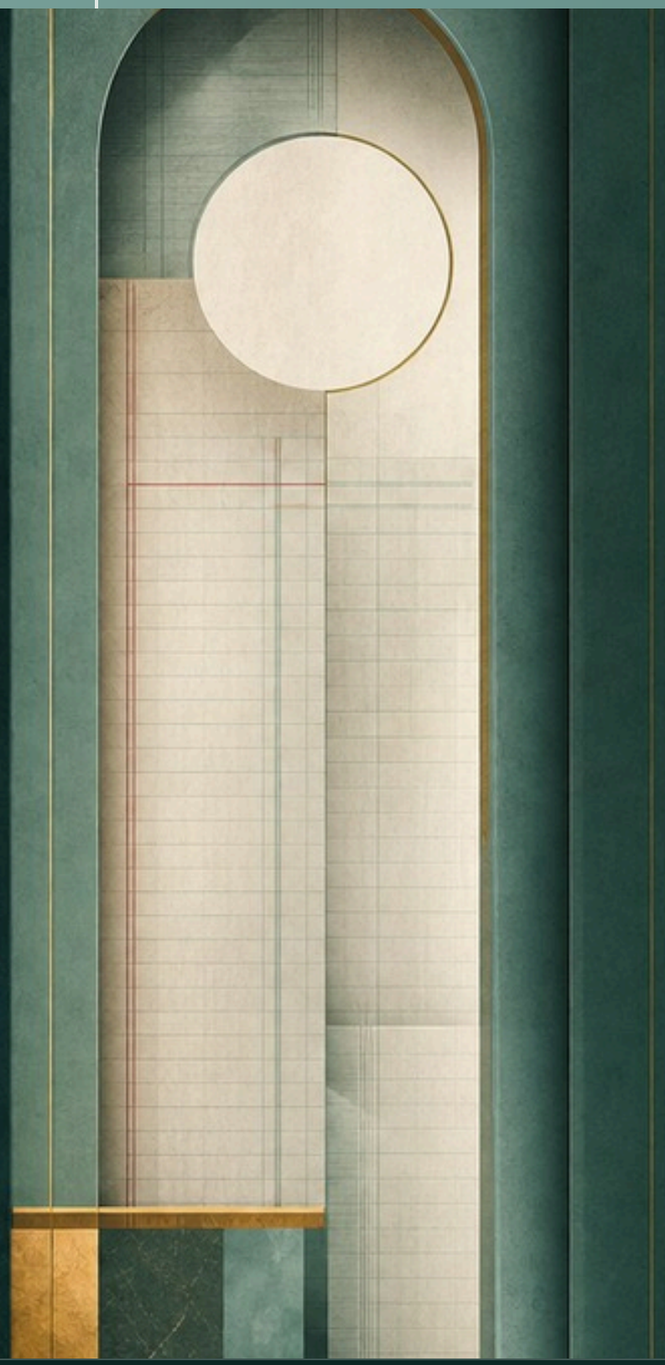
Sales growth versus collection delays

Compare two alternatives for 2027. Customers have 30 days to pay in both.

Not yet due Overdue

Receivables at December 31, 2027





EARNINGS AND OPERATING CASH

Compare earnings with operating cash

How much cash accompanied the reported profit, and what explains the difference?

What the cash-income difference means

Some possible explanations connect the difference to future collections, payments, or inventory available to sell.

Effect on cash relative to income		Business meaning
Uncollected sales make cash lower.	→	Customers still owe payment.
Cash spent on additional inventory makes cash lower.	→	The company has more inventory available to sell.
Unpaid operating expenses make cash higher.	→	The company still owes payment.
Depreciation makes cash higher relative to income.	→	The difference reflects an expense without a current cash payment.

Why Zoomies' operating cash exceeds net income

Zoomies reports $36,500 of operating cash and $17,000 of net income. Use the separate net income reconciliation to explain the $19,500 difference.

Zoomies' net income reconciliation

Year ended December 31, 2026

Net income and adjustments	Amount
Net income	17,000
Depreciation	16,000
Loss on van sale	3,000
Credit loss expense	3,000
Receivables decrease, excluding write-offs	6,000
Gift card liability decrease	(3,000)
Inventory increase	(12,000)
Supplier payables increase	7,000
Supplies increase	(1,000)
Utilities payable increase	500
Interest payable decrease	(1,000)
Income taxes payable increase	1,000
Operating cash	**36,500**

What the main adjustments mean

Depreciation adds $16,000. The expense lowers income while current operating cash is unchanged.

Inventory and supplier payables together subtract $5,000. Purchases exceeded cost of goods sold, and part remained unpaid. Zoomies paid suppliers $195,000 against $190,000 of cost of goods sold.

Receivable collections add $6,000. Collections exceeded current credit sales, reducing the receivables still to be collected.

Operating-cash-to-income ratio

The **operating-cash-to-income ratio** measures operating cash per dollar of reported profit. Comparing it across periods helps us assess whether operating cash is keeping pace with earnings.

$$\text{Ratio} = \frac{\text{Net cash from operating activities}}{\text{Net income}}$$

Use amounts for the same company and period. For Zoomies in 2026:

$$\text{Ratio} = \frac{\$36{,}500}{\$17{,}000} = 2.15$$

→ Zoomies generated $2.15 of operating cash for each $1 of net income.

With positive net income, a ratio above 1 means operating cash exceeds profit. A ratio below 1 means operating cash is lower than profit.

Is operating cash keeping pace with profit?

Worked example: compare operating cash with profit for a separate company.

	2026	2027
Net income	$20,000	$40,000
Operating cash	$32,000	$40,000
Operating-cash-to-income ratio	$\frac{\$32,000}{\$20,000} = 1.60$	$\frac{\$40,000}{\$40,000} = 1.00$

Operating cash increased, but profit grew faster, so operating cash per dollar of profit fell.

Compare the two years' indirect reconciliations to investigate why cash did not grow as fast as profit.

A falling cash-to-income ratio

iClicker | Question 4 of 5

A company reports these amounts. Calculate the operating-cash-to-income ratio for each year. Which ratios and conclusion are correct? Choices list 2026 first, then 2027.

	2026	2027
Net income	$100,000	$200,000
Operating cash	$120,000	$180,000

A 0.90, 1.20; operating cash grew faster than profit.

B 1.20, 0.90; the company cannot pay its bills.

C 1.20, 0.90; operating cash grew more slowly than profit.

D 1.20, 0.90; collections must have slowed.

A falling cash-to-income ratio: answer

iClicker | Answer 4 of 5

Correct answer: C.

A company reports these amounts. Calculate the operating-cash-to-income ratio for each year. Which ratios and conclusion are correct? Choices list 2026 first, then 2027.

	2026	2027
Net income	$100,000	$200,000
Operating cash	$120,000	$180,000

A **0.90, 1.20; operating cash grew faster than profit.**
Incorrect. The ratios are reversed. Profit grew faster than operating cash.

B **1.20, 0.90; the company cannot pay its bills.**
Incorrect. The amounts do not identify available cash or payments due.

C **1.20, 0.90; operating cash grew more slowly than profit.**
Correct. The ratios are $120,000 / $100,000 = 1.20 and $180,000 / $200,000 = 0.90. Cash increased less rapidly than profit.

D **1.20, 0.90; collections must have slowed.**
Incorrect. The totals do not identify the cause. The indirect reconciliation is needed to investigate it.

Limits of the operating-cash-to-income ratio

Operating cash stays at $10,000 in these separate examples. Only net income changes.

Net income	Ratio calculation	Interpretation
$500	$\frac{\$10{,}000}{\$500} = 20.00$	A small positive income makes the ratio unusually large.
$0	$\frac{\$10{,}000}{\$0} = \text{Undefined}$	Division by zero is undefined.
($5,000)	$\frac{\$10{,}000}{(\$5{,}000)} = (2.00)$	A loss prevents the usual cash-per-dollar-of-profit interpretation.

Negative operating cash divided by a net loss produces a positive ratio, even though operations used cash.

Calculate and interpret free cash flow

Compare operating cash with cash spent on property, plant, and equipment.

Defining free cash flow

Cash purchases of property, plant, and equipment (PP&E) are investing activities. Operating cash has not deducted those payments.

We use this definition:

Free cash flow = Operating cash - Cash purchases of PP&E.

Exclude noncash acquisitions, asset-sale proceeds, and depreciation from this formula.

> Free cash flow is not a standardized GAAP subtotal. Check each source's definition before comparing amounts.

Interpreting free cash flow

Positive free cash flow

- Operating cash covered the asset purchases.
- Cash remains for uses such as debt repayment or dividends.

Negative free cash flow

- Operating cash did not cover the asset purchases.
- The company needs existing cash or other funding for the shortfall.

The purchase purpose matters: replacement maintains existing operations; expansion adds capacity for future business.

Zoomies' free cash flow

In 2026, Zoomies paid $45,000 cash for a replacement van.

Zoomies, 2026	Amount
Operating cash	$36,500
Cash paid for the replacement van	($45,000)
Free cash flow	**($8,500)**

Zoomies needed $8,500 beyond its operating cash to pay for the replacement van.

Cash purchases in free cash flow

iClicker | Question 5 of 5

A company has operating cash of $60,000. It buys equipment costing $90,000, paying $50,000 cash and signing a $40,000 seller note. It also receives $8,000 from selling old equipment and records $12,000 depreciation. What is free cash flow under our definition?

A ($30,000)

B $18,000

C ($2,000)

D $10,000

Cash purchases in free cash flow: answer

iClicker | Answer 5 of 5 — **Correct answer: D.**

A company has operating cash of $60,000. It buys equipment costing $90,000, paying $50,000 cash and signing a $40,000 seller note. It also receives $8,000 from selling old equipment and records $12,000 depreciation. What is free cash flow under our definition?

A **($30,000)**
Incorrect. This subtracts the full equipment cost, including the noncash seller note.

B **$18,000**
Incorrect. This includes asset-sale proceeds, which our formula excludes.

C **($2,000)**
Incorrect. This subtracts depreciation as though it were a cash purchase.

D **$10,000**
Correct. Subtract only cash paid for equipment: $60,000 - $50,000 = $10,000.

Compare two years of free cash flow

Work on your own or with those around you.

Given amount	2026	2027
Operating cash	$40,000	$50,000
Cash equipment purchases	$15,000	$35,000

Calculate free cash flow for each year. Explain how its change compares with the change in operating cash.

Equipment spending and free cash flow

A separate company increases both operating cash and equipment spending:

Measure	2026	2027	Change
Operating cash	40,000	50,000	10,000
Cash equipment purchases	15,000	35,000	20,000
Defined free cash flow	**25,000**	**15,000**	**(10,000)**

Equipment spending grew more than operating cash. Free cash flow fell even though operations generated more cash.

Delaying equipment purchases

In the separate 2027 example, suppose the company postpones $20,000 of equipment spending until 2028. Current operating cash stays unchanged.

2027 amount	Planned purchase	Deferred purchase
Operating cash	$50,000	$50,000
Cash equipment spending	$35,000	$15,000
Defined free cash flow	**$15,000**	**$35,000**

The company retains cash in 2027 but waits another year to use the equipment. The postponed payment will require cash in 2028.

Funding needs and the cash balance

After comparing operating cash with equipment purchases, consider debt principal and dividend payments. Those financing payments require cash but are outside our free-cash-flow definition.

> **When debt principal and dividend payments exceed free cash flow, the company needs another source of cash.**

↓

Some funding choices

Use beginning cash

The company has less cash in reserve.

Borrow

The company must repay the borrowing.

Issue shares

Investors gain ownership claims.

Sell assets

The company holds fewer assets.

Include all investing and financing cash flows when calculating the change in cash.

Free cash flow and financing payments

Combine Zoomies' equipment funding gap with its debt principal and dividend payments. Use dividends paid during the year, rather than dividends merely declared.

Zoomies | Year ended December 31, 2026

Cash comparison	Amount
Defined free cash flow	(8,500)
Debt principal repayments	(18,000)
Dividends paid	(8,000)
Cash shortfall before other funding	**(34,500)**

Zoomies' funding and cash increase

Zoomies also received cash from borrowing, issuing shares, and selling its old van:

Zoomies | Year ended December 31, 2026

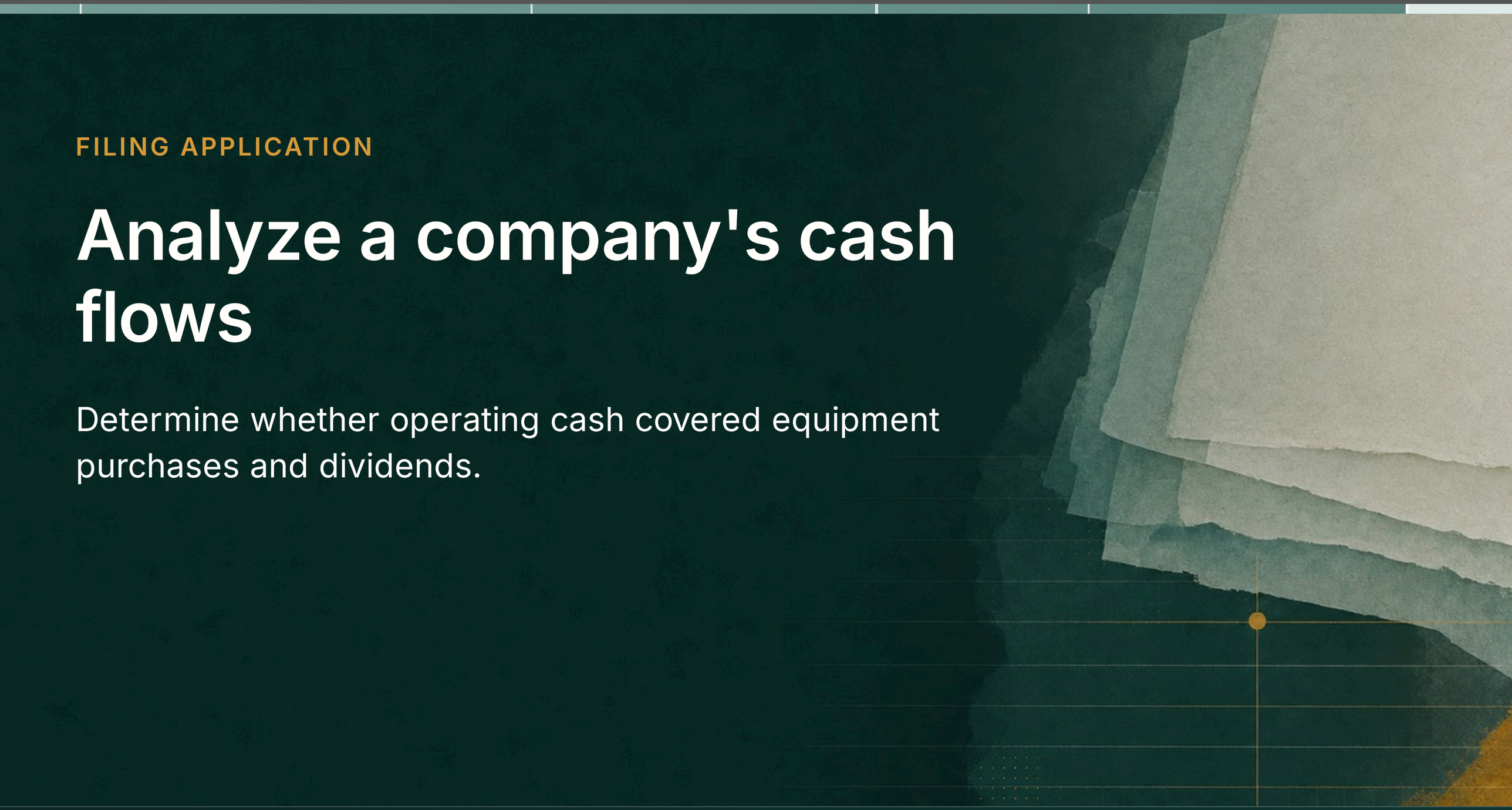
Funding and cash reconciliation	Amount
Cash borrowing	30,000
Cash from issuing shares	12,000
Old van sale proceeds	9,000
Other cash sources	**51,000**
Less cash needed beyond free cash flow	(34,500)
Increase in cash and restricted cash	**16,500**

Beginning cash and restricted cash of $30,000 increase to $46,500. Of the ending total, $10,000 is reserved for debt repayment in 2028.

FILING APPLICATION

Analyze a company's cash flows

Determine whether operating cash covered equipment purchases and dividends.



Did operations cover PetMed's dividends?

Work on your own or with those around you.

PetMed Express, Inc. and subsidiaries | Years ended March 31 | US dollars in thousands

These historical amounts come from the 2023 Form 10-K/A, filed April 15, 2024. Use the restated figures.

Reported amount	2022	2023
Net cash provided by operating activities	18,498	27,803
Purchases of property and equipment, cash paid	1,752	5,260
Dividends paid	24,384	24,537

- Calculate free cash flow for each year.
- Subtract dividends paid from each year's free cash flow.
- Did operations cover both equipment purchases and dividends?

Calculate the dividend funding gap

PetMed | Years ended March 31 | US dollars in thousands

Calculate free cash flow.

Cash calculation	2022	2023
Operating cash	18,498	27,803
Less: cash equipment purchases	(1,752)	(5,260)
Free cash flow	**16,746**	**22,543**

Compare free cash flow with dividends.

Cash calculation	2022	2023
Free cash flow	16,746	22,543
Less: dividends paid	(24,384)	(24,537)
Cash remaining after dividends	**(7,638)**	**(1,994)**

The negative amounts are funding shortfalls.

PetMed needed other cash for dividends

PetMed | Years ended March 31 | US dollars in thousands

Dividend funding shortfall

2022		2023
7,638	→	1,994

The gap narrowed, but operations still did not cover equipment purchases and dividends. PetMed needed other cash to pay those dividends.

Where did the other cash come from? Inspect the rest of the cash-flow statement to identify the source.

NEXT CLASS · THURSDAY, OCTOBER 15

Measure notes and effective interest

We will measure notes using present value and calculate effective interest.

Upcoming dates

- **October 14, 11:59 p.m.:** Replacement company tickers are due.
- **October 22:** Take the Units 3 and 4 mini-exam.
- **October 25, 11:59 p.m.:** The Unit 4 review assignment is due.