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1. Enroll in the CMA program at www.imanet.org/en/IMA-Certifications/CMA-Certification/Enroll-in-the-CMA
2. Register for the CMA Exam (page 8 of the CMA handbook, available on the IMA website www.imanet.org/ima-certifications/cma-certification/cma-handbook)
3. Plan to complete certification requirements, discussed throughout the CMA handbook available on the IMA website.



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CMA Exam Review

Part 2

Strategic Financial Management

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PART 2

Table of Contents

Introduction.....	Intro-1
 UNIT 1: 2A. Financial Statement Analysis	
1. A.1. Financial Statement Analysis	3
2. A.2. Financial Ratios: Part 1	13
3. A.2. Financial Ratios: Part 2	39
4. A.2. Financial Ratios: Part 3 A.3. Profitability Analysis.....	65
5. A.4. Special Issues.....	89
Class Question Explanations	109
 UNIT 2: 2B. Corporate Finance	
1. B.1. Financial Risk and Return.....	3
2. B.2. Long-Term Financial Management: Part 1	17
3. B.2. Long-Term Financial Management: Part 2.....	33
4. B.3. Raising Capital	53
5. B.4. Working Capital Management: Part 1.....	71
6. B.4. Working Capital Management: Part 2.....	87
7. B.5. Corporate Restructuring	99
8. B.6. International Finance.....	119
Class Question Explanations	139
 UNIT 3: 2C. Business Decision Analysis	
1. C.1. Cost-Volume-Profit Analysis	3
2. C.2. Marginal Analysis: Part 1	27
3. C.2. Marginal Analysis: Part 2 C.3. Pricing.....	43
Class Question Explanations	75
 UNIT 4: 2D. Enterprise Risk Management	
1. D.1. Enterprise Risk Management: Part 1	3
2. D.1. Enterprise Risk Management: Part 2.....	19
Class Question Explanations	43
 UNIT 5: 2E. Capital Investment Decisions	
1. E.1. Capital Budgeting Process.....	3
2. E.2. Capital Investment Analysis Methods.....	13
Class Question Explanations	29

UNIT 6: 2F. Professional Ethics

1. F.1. Business Ethics	3
2. F.2. Ethical Considerations for Management Accounting and Financial Management Professionals.....	9
3. F.3. Ethical Considerations for the Organization: Part 1	17
4. F.3. Ethical Considerations for the Organization: Part 2.....	31
Class Question Explanations	41

PART 2

Introduction

Becker's CMA Exam Review—Course Introduction	3
Becker Customer and Academic Support	3
CMA Certification and Exam Overview	4
Certification Basics	4
Eligibility Requirements	4
Exam Schedule	5
Exam Pass Rate and Study Time Recommendation	5
Exam Topics	5
Exam Scoring	6

NOTES

Becker's CMA Exam Review—Course Introduction

Becker Professional Education developed its CMA Exam Review products to give you the best chance for success. Our integrated learning materials—including textbooks, multiple-choice questions, essays, concept videos, flashcards, and course software—prepare you to pass the exam.

We don't want you to be surprised on exam day. That's why Becker partners with the Institute of Management Accountants (IMA) to ensure the most current content is always available to you. Moreover, our CMA course provides 100 percent coverage of CMA Learning Outcome Statements, so you never need to worry about studying out-of-date concepts.

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CMA Certification and Exam Overview

Certification Basics

The CMA credential is bestowed by the IMA, the Institute of Management Accountants, the governing body for management accounting.

Earning a CMA entails certain education prerequisites, proven work experience, an active IMA membership, and other requirements. Candidates must pass the two parts of the CMA Exam in order to become fully certified. The CMA Exam tests across different disciplines related to management accounting and passing the exam sections helps to validate your understanding of key financial processes. Part 1 of the CMA Exam focuses largely on aspects of financial planning, while Part 2 is centered on financial management.

Eligibility Requirements

CMA Exam requirements

To be eligible for the CMA certification, you need to meet certain eligibility requirements. These requirements include:

Active membership with the Institute of Management Accountants (IMA)

Active membership with the IMA grants you access to the CMA certification process. Once you're a member, you can track your CMA Exam score and access your certificate online. Membership in IMA gives you access to the tools, information, and peer networks you need to enrich your career and add value to your organization. By joining the IMA network, you can benefit from CMA certification, CSCA certification, continuing education, leadership opportunities, informative thought leadership, networking, and community.

Education

You can meet the CMA education requirement with a bachelor's degree from an accredited college or university or with certain professional certifications. CMA candidates must submit verification of education to the IMA within seven years of completing the CMA Exam in order to earn certification.

Experience

To earn your CMA certification, you must complete two continuous years of professional experience in management accounting or financial management. This requirement can be met before or within seven years of passing the CMA Exam. Internships and nontechnical positions do not meet the experience requirement, but the IMA shares a full list of qualifying roles in the CMA handbook.

Pass the CMA Exam

You must pass both parts of the CMA Exam. In order to apply and take the CMA Exam, you must pay a CMA entrance fee. If both exam parts are not successfully completed within three years of paying the entrance fee, any passed part will expire and the entrance fee will need to be paid again. For more information on the CMA entrance fee, visit the CMA handbook.

Continuing professional education

To maintain your CMA certification, you must complete 30 hours of Continuing Professional Education (CPE), including two hours of ethics courses each year.

Exam Schedule

The CMA Exam is administered by Prometric testing centers. Both CMA Exam parts are offered in three testing windows: January/February, May/June, and September/October. Registrations for these testing windows close after the 15th of February, June, and October, respectively. Don't forget—you have three years to pass both parts of the exam. This time period begins with your date of entry into the CMA program.

Exam Pass Rate and Study Time Recommendation

According to the IMA, passing the CMA Exam typically takes "12–18 months to complete both parts, on average," and has a "global pass rate of 50%" across Parts 1 and 2.

The IMA recommends studying approximately 130–170 hours per exam section. In addition to passing the exams, candidates who want to become certified must fulfill the education requirements of a bachelor's degree or a professional accounting certification and two years of relevant work experience.

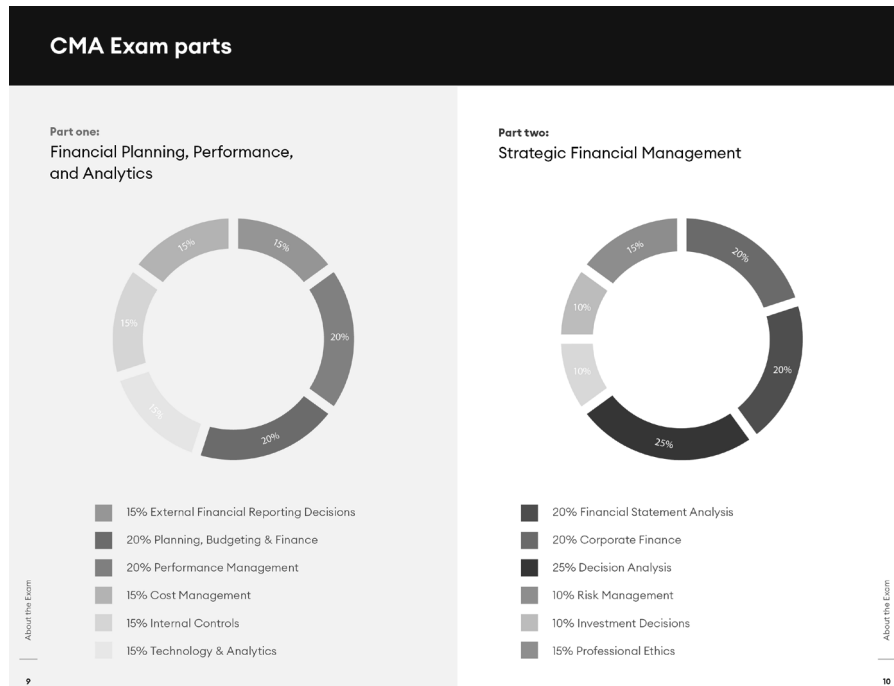
Exam Topics

The CMA Exam includes two 4-hour parts: Part 1: Financial Planning, Performance, and Analytics and Part 2: Strategic Financial Management. Both parts include 100 multiple-choice questions and two 30-minute essays. The essay section includes 10–12 written response or calculation questions based on two scenarios, describing a typical business situation.

You will have three hours to complete the multiple-choice section and one hour to complete the essays. The essays will be presented after you have completed the multiple-choice section of the exam or after three hours, whichever comes first. Once you complete and exit the multiple-choice section of the exam, you cannot go back. You must remain in the essay section to complete the exam.

Note: You must answer at least 50 percent of the multiple-choice questions correctly to be eligible for the essay section.

Here is a breakdown of each part's key topics, their score weighting, and level of coverage.



Note: Changes in GAAP and/or IFRS are reflected on the CMA Exam one year after the effective date.

Exam Scoring

To pass the CMA Exam, you must earn a score of at least 360 out of 500. All scores on the CMA Exam parts are expressed as scaled scores to maintain consistency and fairness across candidates.

If you fail the CMA Exam, Prometric will email a performance report detailing your performance in each key topic area. This report is emailed about two weeks after you receive your exam results. This is a great way to assess your most challenging areas and prepare more effectively for your next attempt. You cannot take an exam part more than one time during a testing window, so you'll have at least one full month to regroup and study again.

CMA candidates are eligible for exam awards based on the total score of Parts 1 and 2. To qualify for an award, you need to pass each of the two parts on the first attempt and complete both parts within one two-month testing window.

2A. Financial Statement Analysis

Module

1	A.1. Financial Statement Analysis	3	+
2	A.2. Financial Ratios: Part 1	13	
3	A.2. Financial Ratios: Part 2	39	+
4	A.2. Financial Ratios: Part 3 A.3. Profitability Analysis	65	+
5	A.4. Special Issues	89	
	Class Question Explanations	109	+

NOTES

This module covers the following content from the IMA *Learning Outcome Statements*.

CMA LOS Reference: Part 2—Section A.1. Comparative Financial Statement Analysis

The candidate should be able to:

- a. for the balance sheet and income statement, prepare and analyze common-size financial statements (i.e., calculate percentage of assets and sales, respectively; also called vertical analysis)
- b. for the balance sheet and income statement, prepare a comparative financial statement horizontal analysis (i.e., calculate year-over-year trends for every item on the financial statement compared to a base year)
- c. calculate the growth rate of individual line items on the balance sheet and income statement
- d. analyze financial statement data to identify patterns and trends that can be used to make business decisions

1 Vertical and Horizontal Analysis

1.1 Vertical Analysis

LOS 2A1a

LOS 2A1d

Common-size financial statements, also called vertical analysis, presents each item in the financial statements as a percentage of a base account within each statement. This type of analysis allows for easier comparison of entities of different sizes and business cycle stages. The data analyzed can be used to identify patterns and trends that can be used to make business decisions.

1.1.1 Income Statement: Vertical Analysis

All line items in the income statement are expressed as a percentage of sales allowing comparison of operating performance between two differently sized entities, especially those in the same industry. Entities in the same industry generally have similar percentages during a period. Understanding the composition of costs enables users to identify significant items that influence profitability.

$$\text{Common-size income statement} = \left[\frac{\text{Income statement line item}}{\text{Sales}} \right] \times 100$$

Vertical analysis can also be used by applying a different denominator within an income statement account. For example, if general and administrative (G&A) costs are the focus, then total G&A expense could be used as the denominator (base) for all expense line items that are included in that total.

The benefit of this is that it may make differences in some expense accounts more obvious by using a smaller base, as opposed to being less obvious when using revenue as the sole base.

Illustration 1 Income Statement Analysis

Taylen Inc. has an opportunity to invest either in an established restaurant in Big City (BC) or in a locally owned restaurant in Taylen's hometown. To determine which investment is better, Taylen reviews the income statement for each company for the most recent quarter:

Big City Restaurant		Local Restaurant	
Sales	\$1,000,000	Sales	\$40,000
Cost of goods sold	<u>500,000</u>	Cost of goods sold	<u>10,000</u>
Gross profit	500,000	Gross profit	30,000
Operating expenses	<u>450,000</u>	Operating expenses	<u>24,000</u>
Net income	<u>\$ 50,000</u>	Net income	<u>\$ 6,000</u>

While the numbers for the restaurant located in Big City are much larger and show a greater profit than the numbers and profit for the local restaurant, a comparison using vertical analysis, with each line item as a percentage of sales revenues, reveals that the local restaurant had a higher operating margin:

Big City Restaurant			Local Restaurant		
Sales	\$1,000,000	100%	Sales	\$40,000	100%
Cost of goods sold	<u>500,000</u>	<u>50%</u>	Cost of goods sold	<u>10,000</u>	<u>25%</u>
Gross profit	500,000	50%	Gross profit	30,000	75%
Operating expenses	<u>450,000</u>	<u>45%</u>	Operating expenses	<u>24,000</u>	<u>60%</u>
Net income	<u>\$ 50,000</u>	<u>5%</u>	Net income	<u>\$ 6,000</u>	<u>15%</u>

Based upon the vertical analysis, Taylen determines that the BC restaurant was less profitable per sales dollar than the local restaurant. The BC restaurant's cost of goods sold as a percentage of sales was double the rate for the local restaurant and therefore diminished the profit potential for the BC restaurant. Although the local restaurant's operating expenses as a percentage of sales were higher, the local restaurant generated a 15 percent return for every dollar of sales revenue earned by the local restaurant, compared to a 5 percent return for the BC restaurant.

1.1.2 Balance Sheet: Vertical Analysis

All line items in the balance sheet are expressed as a percentage of total assets (or the sum of total liabilities and stockholders' equity, which equals total assets).

$$\text{Common-size balance sheet} = \left[\frac{\text{Balance sheet line item}}{\text{Total assets}} \right] \times 100$$

Different accounts can be used as the base in order to make comparisons. Depending on the size of the company, the base could be total fixed assets, total current assets, total current liabilities, or total long-term debt.

Example 1 Balance Sheet Analysis

Facts: Apex Corp.'s management has set targets for specific balance sheet accounts as a percentage of total assets, as set forth below:

	% of Total Assets
Cash	5%
Property, plant, and equipment	50%
Current liabilities	10%

The balance sheet for the current year reflects the following balances:

Apex Corp. Balance Sheet December 31, Year 1	
Current assets:	
Cash	\$ 50,000
Accounts receivable, net	80,000
Inventory	<u>160,000</u>
Total current assets	290,000
Property, plant, and equipment, net	<u>120,000</u>
Total assets	<u><u>\$410,000</u></u>
Liabilities and stockholders' equity:	
Current liabilities:	
Accounts payable	\$110,000
Notes payable	<u>50,000</u>
Total current liabilities	160,000
Stockholders' equity:	
Common stock	190,000
Retained earnings	<u>60,000</u>
Total liabilities and stockholders' equity	<u><u>\$410,000</u></u>

Required: To determine if Apex is meeting its goals, prepare a common-size balance sheet based on total assets.

(continued)

(continued)

Solution: To determine individual percentages (rounded to one decimal place), divide each line item amount by \$410,000, the amount of total assets:

Apex Corp. Common-Size Balance Sheet December 31, Year 1	
Current assets:	
Cash	12.2%
Accounts receivable, net	19.5%
Inventory	<u>39.0%</u>
Total current assets	70.7%
Property, plant, and equipment, net	<u>29.3%</u>
Total assets	<u><u>100.00%</u></u>
Liabilities and stockholders' equity:	
Current liabilities:	
Accounts payable	26.8%
Notes payable	<u>12.2%</u>
Total current liabilities	39.0%
Stockholders' equity:	
Common stock	46.4%
Retained earnings	<u>14.6%</u>
Total liabilities and stockholders' equity	<u><u>100.00%</u></u>

Apex currently has 12.2 percent of total assets in cash—more than double the percentage desired by management. Property, plant, and equipment represent only 29.3 percent of total assets—significantly below the 50 percent target. Apex's management should consider investing excess cash in property, plant, and equipment (capital expenditures) to reach its targets.

Current liabilities are 39.0 percent of total assets, exceeding Apex's 10 percent target. By obtaining an understanding of the relationship of each balance sheet account to total assets, management can better direct the activities of the company. An alternative to spending Apex's excess cash on capital expenditures would be to pay off current liabilities, minimizing the ratios for cash and current liabilities. Apex could then issue more equity to fund investments in property, plant, and equipment, achieving its target of 50 percent.

1.2 Horizontal Analysis

LOS 2A1b

LOS 2A1d

Management can use horizontal analysis (base-year trend analysis) in combination with vertical analysis to examine the changes in accounts over time. Horizontal analysis helps focus on account balance increases or decreases in relation to a specific base year in order to identify notable trends. The base year is the earliest year reported, and all successive years are expressed in proportion to that base-year amount. This method provides a constant base against which multiple years may be analyzed.

A horizontal analysis of the income statement may review growth in targeted line items over time. This type of analysis can be performed for any income statement account for which management desires to identify possible trends. A horizontal analysis of the balance sheet allows management to review growth over time in targeted individual balance sheet accounts as well as broader changes to total assets, total liabilities, and total equity.

$$\text{Common base-year statements} = \left[\frac{\text{New line item amount}}{\text{Base year line item amount}} \right] \times 100$$

Example 2 Horizontal Analysis

Facts: Apex Corp.'s management is analyzing the income statement for Year 2 and Year 3 to evaluate trends in the financial statement results. Below are the income statements for the past three years.

Apex Corp. Income Statement for the Years Ended December 31			
	Year 3	Year 2	Year 1
Net sales	\$2,100,000	\$1,800,000	\$1,300,000
Cost of goods sold	<u>(1,390,000)</u>	<u>(1,200,000)</u>	<u>(880,000)</u>
Gross profit	\$ 710,000	\$ 600,000	\$ 420,000
Total operating expenses	(380,000)	(300,000)	(200,000)
Income taxes	<u>(28,000)</u>	<u>(30,000)</u>	<u>(12,000)</u>
Net income	<u>\$ 302,000</u>	<u>\$ 270,000</u>	<u>\$ 208,000</u>

Required: Prepare a horizontal analysis for Apex's Year 2 and Year 3 income statements using Year 1 as the base year and discuss any notable trends.

(continued)

(continued)

Solution:

Apex Corp. Income Statement for the Years Ended December 31				
	Year 3	Year 2	Year 3	Year 2
Net sales	\$2,100,000	\$1,800,000	161.54%	138.46%
Cost of goods sold	<u>(1,390,000)</u>	<u>(1,200,000)</u>	157.95%	136.36%
Gross profit	\$ 710,000	\$ 600,000	169.05%	142.86%
Total operating expenses	(380,000)	(300,000)	190.00%	150.00%
Income taxes	<u>(28,000)</u>	<u>(30,000)</u>	233.33%	250.00%
Net income	<u>\$ 302,000</u>	<u>\$ 270,000</u>	145.19%	129.81%

This analysis shows that all income statement line items increase in Years 2 and 3 when compared to Year 1. Note that the common base-year amount for each line item reveals the percentage change for that line item from Year 1. For example, Year 2 net sales expressed in terms of Year 1 are 138.46 percent, which means that Year 2 net sales are 38.46 percent higher than Year 1 net sales.

Horizontal analysis assists with identifying trends in financial statement line items. For example, net sales grew in both Year 2 and Year 3. However, net sales has not grown as quickly in Year 3 as it did in Year 2. While Apex Corp. may have gained additional market share, additional analysis may be necessary to understand why the growth in Year 3 was not as significant as the growth in Year 2. In addition, it appears that management may have identified this trend and responded by slowing the growth rate of operating expenses between Year 2 and Year 3. This helped to preserve and grow net income for Apex Corp. over the three-year period.

LOS 2A1c **1.3. Financial Statement Growth Rates**

LOS 2A1d To determine positive or negative growth from year to year, management should frequently review financial statement accounts. Unlike horizontal analysis where a single base year is used for all calculations, measuring growth rates using annual dollar amounts involves shifting the base year forward by one year.

$$\text{Annual growth rate of line items} = \left[\frac{\text{New line item amount}}{\text{Old line item amount}} \right] - 1$$

Example 3 Growth Rate Analysis

Facts: Apex Corp.'s management is reviewing the income statement and balance sheet for Years 1 through 3:

Apex Corp. Income Statement for the Years Ended December 31			
	Year 3	Year 2	Year 1
Net sales	\$2,100,000	\$1,800,000	\$1,300,000
Cost of goods sold	<u>(1,390,000)</u>	<u>(1,200,000)</u>	<u>(880,000)</u>
Gross profit	\$ 710,000	\$ 600,000	\$ 420,000
Total operating expenses	(380,000)	(300,000)	(200,000)
Income taxes	<u>(28,000)</u>	<u>(30,000)</u>	<u>(12,000)</u>
Net income	<u>\$ 302,000</u>	<u>\$ 270,000</u>	<u>\$ 208,000</u>

Apex Corp. Balance Sheet December 31			
	Year 3	Year 2	Year 1
Current assets:			
Cash	\$100,000	\$ 80,000	\$ 50,000
Accounts receivable	135,000	100,000	80,000
Inventory	160,000	120,000	160,000
Property, plant, and equipment, net	<u>310,000</u>	<u>250,000</u>	<u>120,000</u>
Total assets	<u>\$705,000</u>	<u>\$550,000</u>	<u>410,000</u>
Liabilities and stockholders' equity:			
Accounts payable	\$125,000	\$100,000	\$110,000
Notes payable	90,000	70,000	50,000
Common stock	280,000	280,000	190,000
Retained earnings	<u>210,000</u>	<u>100,000</u>	<u>60,000</u>
Total liabilities and stockholders' equity	<u>\$705,000</u>	<u>\$550,000</u>	<u>\$410,000</u>

Required: Prepare a growth rate analysis of Apex's income statement and balance sheet for Years 1 through 3.

(continued)

(continued)

Solution:

Apex Corp. Income Statement for the Years Ended December 31					
	Year 3	Year 2	Year 1	% Chg. Y2-Y3	% Chg. Y1-Y2
Net sales	\$2,100,000	\$1,800,000	\$1,300,000	16.67%	38.46%
Cost of goods sold	<u>(1,390,000)</u>	<u>(1,200,000)</u>	<u>(880,000)</u>	15.83%	36.36%
Gross profit	\$ 710,000	\$ 600,000	\$ 420,000	18.33%	42.86%
Total operating expenses	(380,000)	(300,000)	(200,000)	26.67%	50.00%
Income taxes	<u>(28,000)</u>	<u>(30,000)</u>	<u>(12,000)</u>	(6.67%)	150.00%
Net income	<u>\$ 302,000</u>	<u>\$ 270,000</u>	<u>\$ 208,000</u>	11.85%	29.81%

Apex Corp. Balance Sheet Years 1, 2, and 3					
	Year 3	Year 2	Year 1	% Chg. Y2-Y3	% Chg. Y1-Y2
Current assets:					
Cash	\$100,000	\$ 80,000	\$ 50,000	25.00%	60.00%
Accounts receivable	135,000	100,000	80,000	35.00%	25.00%
Inventory	160,000	120,000	160,000	33.33%	(25.00%)
Property, plant, and equipment, net	<u>310,000</u>	<u>250,000</u>	<u>120,000</u>	24.00%	108.33%
Total assets	<u>\$705,000</u>	<u>\$550,000</u>	<u>410,000</u>	28.18%	34.15%
Liabilities and stockholders' equity:					
Accounts payable	\$125,000	\$100,000	\$110,000	25.00%	(9.09%)
Notes payable	90,000	70,000	50,000	28.57%	40.00%
Common stock	280,000	280,000	190,000	0.00%	47.37%
Retained earnings	<u>210,000</u>	<u>100,000</u>	<u>60,000</u>	110.00%	66.67%
Total liabilities and stockholders' equity	<u>\$705,000</u>	<u>\$550,000</u>	<u>\$410,000</u>	28.18%	34.15%

(continued)

(continued)

Evaluating the growth rate in this way reveals nuances that otherwise might be missed by only looking at a horizontal or vertical analysis. Calculating the percentage change year-over-year reveals that profits grew but at a slower rate in Year 3 than in Year 2 (11.85% vs. 29.81%).

The balance sheet supports the slowdown in sales as inventory increased 33.33 percent in Year 3 compared to a decline of 25 percent in Year 2. Apex issued no equity in Year 3 but did have an increase in both long-term debt (notes payable) and short-term debt (accounts payable), possibly to cushion operations as a result of slower growth than expected.

Question 1

MCQ-12701

A useful analysis to compare a large accounting firm's operating results with a small, local accounting firm is:

- a. Horizontal analysis.
- b. Vertical analysis.
- c. Growth rate analysis.
- d. Sensitivity analysis.

Question 2

MCQ-12702

Sweetwater Corp.'s accountant has been asked to recreate financial statement information that was destroyed when a disgruntled manager deleted files and destroyed paper documents. A partial growth rate analysis of an income statement was recovered:

	Percentage of Base Year			Growth Rate Analysis Increase (Decrease) From Previous Year	
	<u>Year 3</u>	<u>Year 2</u>	<u>Year 1</u>	<u>Year 3</u>	<u>Year 2</u>
Net sales	?	105.42%		4.82%	?
Cost of goods sold	?	95.74%		3.45%	?
Gross profit	?	99.63%		5.14%	?
Operating expenses	?	110.28%		(12.95%)	?
Income taxes	?	102.12%		3.34%	?
Net income	?	114.18%		?	?

Using growth rate analysis, what is the percentage change in operating expenses for Year 3 over the base year?

- a. 124.56%
- b. 96.00%
- c. 87.05%
- d. 97.63%

Question 3**MCQ-12703**

Sweetwater Corp.'s accountant has been asked to recreate financial statement information that was destroyed when a disgruntled manager deleted files and destroyed paper documents. A partial growth rate analysis of an income statement was recovered:

	Percentage of Base Year			Growth Rate Analysis Increase (Decrease) From Previous Year	
	<u>Year 3</u>	<u>Year 2</u>	<u>Year 1</u>	<u>Year 3</u>	<u>Year 2</u>
Net sales	?	105.42%		4.82%	?
Cost of goods sold	?	95.74%		3.45%	?
Gross profit	?	99.63%		5.14%	?
Operating expenses	?	110.28%		(12.95%)	?
Income taxes	?	102.12%		3.34%	?
Net income	?	114.18%		?	?

If Year 2 cost of goods sold is \$344,644, what is the dollar amount for cost of goods sold in Year 1?

- a. \$361,255
- b. \$359,979
- c. \$356,534
- d. \$344,644