

PHFO QUANTITATIVE ANALYSIS FOR BUSINESS PRE- ASSESSMENT PRACTICE EXAM (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

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- 1. Which statement best describes the purpose of a decision tree in decision analysis?**
- A. To compute variance of a statistic.
 - B. To model decisions under uncertainty using probabilities and payoffs.
 - C. To estimate sample size.
 - D. To measure regression coefficients.
- 2. What does MAPE stand for?**
- A. Mean Absolute Percentage Error
 - B. Mean Absolute Predictive Error
 - C. Median Absolute Percentage Error
 - D. Mean Percentage Absolute Error
- 3. With a p-value of 0.03 and alpha of 0.05, what is the decision?**
- A. Fail to reject H_0 ; result is not statistically significant.
 - B. Reject H_0 ; result is statistically significant.
 - C. Fail to reject H_0 ; result is statistically significant.
 - D. Reject H_0 ; result is not statistically significant.
- 4. What is the present value of 5,000 to be received in 3 years discounted at 10% annually?**
- A. Approximately 4,200
 - B. Approximately 4,500
 - C. Approximately 3,756
 - D. Approximately 2,800
- 5. An owner must decide whether to move to a new location or renovate. The expected value for moving to a new location is \$625,000. Which option best represents this information?**
- A. \$500,000
 - B. \$625,000
 - C. \$750,000
 - D. \$1,000,000

6. In a 3-period moving average forecast, the forecast for the next period is the average of the previous three observations.
- A. The forecast equals the average of the previous three observations.
 - B. The forecast uses exponential smoothing formula.
 - C. The forecast equals the sum of last three observations.
 - D. The forecast uses the most recent observation only.
7. The sample standard deviation of the data {2,4,4,4,5,5,7,9} is approximately which value?
- A. 2.14
 - B. 2.00
 - C. 2.20
 - D. 1.98
8. What is the estimated economic order quantity for the goat cheese?
- A. 25 pounds
 - B. 50 pounds
 - C. 75 pounds
 - D. 100 pounds
9. For the dataset with points (1,3) and (3,7), the least-squares regression line is $y = a + b x$.
- A. $y = 1 + 2x$
 - B. $y = 2 + x$
 - C. $y = 3 + 2x$
 - D. $y = 0 + 2x$
10. From a standard deck of 52 cards, what is the probability that two cards drawn without replacement are both aces?
- A. $1/221 \approx 0.00452$
 - B. $1/13 \approx 0.0769$
 - C. $1/52 \approx 0.0192$
 - D. $1/170 \approx 0.00588$

Answers

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1. B
2. A
3. B
4. C
5. B
6. A
7. A
8. B
9. A
10. A

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Explanations

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1. Which statement best describes the purpose of a decision tree in decision analysis?

- A. To compute variance of a statistic.
- B. To model decisions under uncertainty using probabilities and payoffs.**
- C. To estimate sample size.
- D. To measure regression coefficients.

Decision trees model decisions under uncertainty by mapping each choice to possible future events, attaching probabilities to uncertain outcomes and payoffs (or costs) to those outcomes. By working backward from the end, you calculate the expected value of each path and choose the option that yields the highest expected value. This approach directly combines likelihoods with consequences to guide optimal decisions under risk. The other tasks aren't about choosing between options under uncertainty: variance is about dispersion in a statistic, estimating sample size is about planning how many observations are needed, and measuring regression coefficients is about quantifying relationships in a model.

2. What does MAPE stand for?

- A. Mean Absolute Percentage Error**
- B. Mean Absolute Predictive Error
- C. Median Absolute Percentage Error
- D. Mean Percentage Absolute Error

MAPE measures forecast accuracy by averaging the absolute percentage errors between actual values and forecasts. The "mean" shows we average across all observations, "absolute" means we use the magnitude of errors (no cancellation from signs), and "percentage" expresses those errors relative to the actual values, giving a scale-free measure. The standard name for this metric is Mean Absolute Percentage Error. The other terms aren't standard: one uses a median instead of a mean, another misorders the words, and the first option uses an uncommon phrasing. The familiar formula is $MAPE = (1/n) \sum |(Actual - Forecast) / Actual| \times 100\%$.

3. With a p-value of 0.03 and alpha of 0.05, what is the decision?

- A. Fail to reject H_0 ; result is not statistically significant.
- B. Reject H_0 ; result is statistically significant.**
- C. Fail to reject H_0 ; result is statistically significant.
- D. Reject H_0 ; result is not statistically significant.

In hypothesis testing, you compare the p-value to your chosen significance level. If the p-value is less than the alpha, you reject the null hypothesis and declare the result statistically significant. The p-value represents the probability of observing data as extreme as or more extreme than what you saw if the null hypothesis is true. Here, $p = 0.03$ and $\alpha = 0.05$. Since 0.03 is smaller than 0.05, you reject the null hypothesis and conclude the result is statistically significant.

4. What is the present value of 5,000 to be received in 3 years discounted at 10% annually?

- A. Approximately 4,200
- B. Approximately 4,500
- C. Approximately 3,756
- D. Approximately 2,800

Present value shows how much a future amount is worth today when you discount it at a given rate. Use $PV = FV / (1 + i)^t$. Here, FV is 5,000, i is 10% (0.10), and t is 3 years. Compute $(1.10)^3 = 1.331$, then $PV = 5,000 / 1.331 \approx 3,756.57$, so about 3,756. This is the amount you would need today to receive 5,000 three years from now at a 10% annual return. The other numbers would come from using a different rate or a different time horizon, not from 10% over three years.

5. An owner must decide whether to move to a new location or renovate. The expected value for moving to a new location is \$625,000. Which option best represents this information?

- A. \$500,000
- B. \$625,000
- C. \$750,000
- D. \$1,000,000

The key idea is matching the numerical value given for the moving option. The problem states that the expected value for moving to a new location is \$625,000. The best representation of that information is the exact amount provided, which is 625,000 dollars. The other numbers don't reflect the value given for moving, so they don't represent the information described.

6. In a 3-period moving average forecast, the forecast for the next period is the average of the previous three observations.

- A. The forecast equals the average of the previous three observations.
- B. The forecast uses exponential smoothing formula.
- C. The forecast equals the sum of last three observations.
- D. The forecast uses the most recent observation only.

A 3-period moving average forecast uses equal weights for the three most recent observations to predict the next value. So the forecast is the simple mean of those three, computed as (observed at $t-1$ + observed at $t-2$ + observed at $t-3$) divided by 3. This method smooths short-term fluctuations by smoothing across the latest history, under the assumption that recent patterns are good predictors of the near future. This differs from exponential smoothing, which applies decreasing weights to older observations rather than equal weights. It also isn't the sum of the last three observations, which would be a total rather than a forecast, and it isn't just using the most recent observation, which would be a naive forecast based on a single value.

7. The sample standard deviation of the data {2,4,4,4,5,5,7,9} is approximately which value?

A. 2.14

B. 2.00

C. 2.20

D. 1.98

When you measure spread with the sample standard deviation, you take the square root of the average squared deviations from the mean, using $n-1$ in the denominator to get an unbiased estimate of the population variance. Compute the mean first: the sum is 40, and there are 8 numbers, so the mean is $40/8 = 5$. Find each deviation from the mean and square it: $-(2-5)^2 = 9$ - $(4-5)^2 = 1$ (three times gives 3) - $(5-5)^2 = 0$ (two times gives 0) - $(7-5)^2 = 4$ - $(9-5)^2 = 16$ Sum of squared deviations = $9 + 3 + 0 + 4 + 16 = 32$. Divide by $n-1 = 7$: $32/7 \approx 4.571$. Take the square root: $\sqrt{4.571} \approx 2.14$. So the sample standard deviation is approximately 2.14.

8. What is the estimated economic order quantity for the goat cheese?

A. 25 pounds

B. 50 pounds

C. 75 pounds

D. 100 pounds

The main idea here is choosing an order size that minimizes total annual cost by balancing two opposing costs: how often you place orders and how much inventory you keep on hand. If you order in tiny batches, ordering costs pile up; if you order in big batches, carrying costs rise because you hold more inventory for longer. The standard way to find this balance is the economic order quantity (EOQ) formula: $EOQ = \sqrt{2DS/H}$, where D is the annual demand, S is the cost to place one order, and H is the holding cost per unit per year. This formula captures the trade-off: the first part ($2DS$) reflects the cost of ordering lots, and the denominator H reflects the cost of holding inventory. In the goat cheese problem, you're given data for D , S , and H and asked which quantity minimizes total cost. The value produced by those numbers is the quantity that satisfies the EOQ calculation, so it's the one that minimizes total annual cost. If you tried a smaller quantity, you'd incur more frequent orders; if you tried a larger one, you'd pay more in carrying costs. The option that matches the EOQ given the data is the best choice because it represents the balance point where ordering costs and holding costs are equal in the annual cost framework.

9. For the dataset with points (1,3) and (3,7), the least-squares regression line is $y = a + bx$.

A. $y = 1 + 2x$

B. $y = 2 + x$

C. $y = 3 + 2x$

D. $y = 0 + 2x$

With two data points, the least-squares line passes exactly through both points, giving a perfect fit. The slope is the rise over run between the points: $(7 - 3) / (3 - 1) = 4 / 2 = 2$. Using one point to find the intercept, $3 = 2(1) + a$ gives $a = 1$. So the line is $y = 1 + 2x$, which indeed passes through both points (1,3) and (3,7). The other options do not go through both points, so they would yield nonzero residuals and a worse fit.

10. From a standard deck of 52 cards, what is the probability that two cards drawn without replacement are both aces?

A. $\frac{1}{221} \approx 0.00452$

B. $\frac{1}{13} \approx 0.0769$

C. $\frac{1}{52} \approx 0.0192$

D. $\frac{1}{170} \approx 0.00588$

Drawing two cards without replacement tests how probabilities change as the deck gets smaller. The chance the first card is an ace is $\frac{4}{52}$. If that happens, there are 3 aces left in 51 cards, so the second card being an ace is $\frac{3}{51}$. Multiply these sequential chances: $\frac{4}{52} \times \frac{3}{51} = \frac{12}{2652} = \frac{1}{221} \approx 0.00452$. An equivalent check uses combinations: $C(4,2)/C(52,2) = 6/1326 = 1/221$. So the probability is $\frac{1}{221}$.

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Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

<https://phfoquantanalysis4business.examzify.com>

We wish you the very best on your exam journey. You've got this!

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