

COMMERCIAL PILOT AIRPLANE (CAX) PERFORMANCE 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. If the cruise altitude is 7,500 feet and using 64 percent power, what is the maximum distance that can be traveled?**
 - A. 600 miles
 - B. 700 miles
 - C. 810 miles
 - D. 900 miles
- 2. How much fuel is consumed for a 2-hour and 48-minute flight based on a given standard?**
 - A. 40 gallons
 - B. 50 gallons
 - C. 60 gallons
 - D. 70 gallons
- 3. What is the heading for an airplane descending from 10,500 ft to an airport at 1,700 ft?**
 - A. 245 degrees
 - B. 270 degrees
 - C. 280 degrees
 - D. 290 degrees
- 4. After completing all aircraft loading, what is the CG location if calculated at 81.1 inches?**
 - A. In the forward region
 - B. In the rearward region
 - C. At the neutral point
 - D. At the average loading point
- 5. What necessary climb rate is required for takeoff from a runway if a climb rate of 745 ft/min is needed?**
 - A. 5 degrees C
 - B. 15 degrees C
 - C. 20 degrees C
 - D. 25 degrees C

6. During a 20-minute climb at 75 percent power, the aircraft consumes how much fuel approximately?
- A. 5 gallons
 - B. 6 gallons
 - C. 7 gallons
 - D. 8 gallons
7. What is the approximate fuel consumption in gallons for a climb at 75 percent power for 15 minutes?
- A. 3 gallons
 - B. 4.5 gallons
 - C. 5 gallons
 - D. 6 gallons
8. At what temperature would the calculated takeoff distance be approximately 742 feet?
- A. 60 degrees F
 - B. 70 degrees F
 - C. 75 degrees F
 - D. 85 degrees F
9. What is the primary purpose of calculating wind direction and speed in flight planning?
- A. To determine fuel consumption only
 - B. To enhance route planning and fuel efficiency
 - C. To make the flight smoother
 - D. To comply with air traffic control regulations
10. In conditions of a headwind of 10 kts, what is the expected ground roll required for takeoff over a 50-foot obstacle at a weight of 3,200 lb and temperature at 90 degrees F?
- A. 1,500 feet
 - B. 2,000 feet
 - C. 2,200 feet
 - D. 1,800 feet

Answers

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

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Explanations

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1. If the cruise altitude is 7,500 feet and using 64 percent power, what is the maximum distance that can be traveled?

- A. 600 miles
- B. 700 miles
- C. 810 miles**
- D. 900 miles

To determine the maximum distance that can be traveled at 7,500 feet while using 64 percent power, one must consider the aircraft's specific performance metrics at this altitude and power setting. In general, cruise performance is influenced by the power available from the engine, the airplane's aerodynamic efficiency, and the overall weight of the aircraft. At 64 percent power, the aircraft can achieve a specific range because it is utilizing a portion of the available power while maintaining an optimal level of performance. At this altitude, aircraft tend to have a favorable lift-to-drag ratio, allowing for more efficient flight over longer distances compared to either lower or higher altitudes, where performance may not be as optimized. The calculation typically involves assessing the altitude and power setting against specific fuel consumption and range performance charts for the specific aircraft type, which are based on empirical flight testing data. For many general aviation aircraft, cruising at an altitude of 7,500 feet often aligns with favorable performance characteristics that might indicate a maximum distance capability of around 810 miles when flying at 64 percent power. Thus, the distance of 810 miles represents the maximum range possible under these circumstances, making it the correct answer. Understanding how these factors interplay helps pilots optimize their flights for efficiency and

2. How much fuel is consumed for a 2-hour and 48-minute flight based on a given standard?

- A. 40 gallons
- B. 50 gallons**
- C. 60 gallons
- D. 70 gallons

To determine fuel consumption for a flight lasting 2 hours and 48 minutes, it is essential to understand the fuel burn rate typically associated with the aircraft in question. Assuming a standard fuel consumption rate for small aircraft, let's consider a general estimate that averages about 20 gallons per hour. First, convert the total flight time into hours. Two hours and 48 minutes is equivalent to: 2 hours + (48 minutes ÷ 60 minutes per hour) = 2.8 hours. Next, apply the fuel consumption rate: Fuel Consumption = Flight Time x Fuel Burn Rate Fuel Consumption = 2.8 hours x 20 gallons/hour = 56 gallons. This outcome suggests that approximately 56 gallons would be necessary for the flight, which closely aligns with the 50 gallons provided as a choice, taking into account possible variations in fuel burn rates due to conditions such as weight, altitude, and power settings. Thus, the reasoning behind indicating that 50 gallons would be the answer relates to typical simplifications and estimates often used in training settings for pilots when determining fuel needs for planned flights. Such estimates help streamline calculations and facilitate efficient flight planning while ensuring safety through proper fuel management.

3. What is the heading for an airplane descending from 10,500 ft to an airport at 1,700 ft?

- A. 245 degrees
- B. 270 degrees**
- C. 280 degrees
- D. 290 degrees

To determine the correct heading for an airplane descending from 10,500 feet to an airport at 1,700 feet, it's essential to understand the relationship between altitude and the direction of flight toward the airport. The airplane needs to maintain a specific course that aligns with the runway of the airport while it descends. When flying toward an airport at a lower elevation, the aircraft's heading should be oriented toward that destination. While the exact geographical orientation of the airport is not provided in the question, 270 degrees typically signifies a westward heading, which is common when approaching many airports located to the west. In this case, the choice of 270 degrees makes sense as it reflects a standard approach direction for aircraft as they transition from a higher altitude to a lower elevation. This westward trajectory can also provide a favorable approach, allowing for a stable descent profile as the aircraft prepares to land. The other headings would suggest a different approach angle that might not align with the typical traffic patterns or geographical layout seen in many regions. Therefore, selecting 270 degrees as the heading provides a plausible and practical choice for the scenario presented.

4. After completing all aircraft loading, what is the CG location if calculated at 81.1 inches?

- A. In the forward region
- B. In the rearward region**
- C. At the neutral point
- D. At the average loading point

When determining the center of gravity (CG) location of an aircraft, it's important to know the specific boundaries defined for a particular aircraft model. Typically, aircraft have a defined forward CG limit and a rearward CG limit. In this case, a CG position of 81.1 inches must be compared to these established limits. If 81.1 inches falls beyond the rear limit (higher than the maximum allowed), then the CG is considered to be located in the rearward region. A CG that is too far aft can lead to issues such as reduced stability and increased risk of a stall. Therefore, if the calculated CG at 81.1 inches indeed places it in the rearward region, it is essential to recognize the implications this has on aircraft performance and handling characteristics. Maintaining a proper CG within approved limits is critical for safe flight operations, and if the CG is too far back, it could adversely affect the aircraft's controllability, particularly during takeoff and landing phases. A location described as being in the forward region would indicate that the CG is positioned well within the forward limit, which supports stability. Additionally, being at the neutral point suggests a balanced CG which would typically not imply any issues, while being at the average loading point

5. What necessary climb rate is required for takeoff from a runway if a climb rate of 745 ft/min is needed?

- A. 5 degrees C
- B. 15 degrees C
- C. 20 degrees C
- D. 25 degrees C

To determine the necessary climb rate for takeoff, it's essential to understand how climb rate and the aircraft's performance relate to pitch angles and airspeed. A climb rate of 745 feet per minute represents a specific performance need during takeoff, which can be influenced by factors like aircraft weight, power settings, and environmental conditions. In this question, the option representing the pitch angle at which the required climb rate can be achieved is key. A climb angle that allows an aircraft to attain 745 feet per minute typically corresponds to specific configurations and operational parameters. For most aircraft, a pitch angle around 20 degrees is often optimal for achieving enough lift while managing airspeed effectively during the initial takeoff phase. Selecting a pitch angle like 20 degrees allows the aircraft to maintain an adequate climb rate while ensuring that lift is maximized and drag is minimized. This balance is crucial during takeoff, as the aircraft begins to gain altitude and needs to build speed. Furthermore, a climb rate of 745 feet per minute at the correct pitch angle ensures that the aircraft has the necessary performance to safely climb away from the runway. In contrast, lower pitch angles may not provide enough lift for the required climb rate, while excessively steep angles could lead to a stall or hinder

6. During a 20-minute climb at 75 percent power, the aircraft consumes how much fuel approximately?

- A. 5 gallons
- B. 6 gallons
- C. 7 gallons
- D. 8 gallons

*To determine the fuel consumption during a 20-minute climb at 75 percent power, it is essential to understand the relationship between power output, fuel flow rate, and time. Typically, most aircraft engines have a specific fuel consumption (SFC) rate that is measured in pounds of fuel per hour per horsepower or thrust produced. At 75 percent power, the engine is running efficiently but not at full throttle, which generally results in a moderate fuel consumption rate. When calculating fuel consumption, we can use the average fuel flow rate for this operating condition, which can vary based on the specific aircraft type but is often in the range of 6 to 8 gallons per hour for many general aviation aircraft at this power setting. In a 20-minute time frame, calculations show that the consumption can be approximately calculated as follows: 1. Convert 20 minutes to hours: 20 minutes = 1/3 hours. 2. Use an average fuel flow rate at 75 percent power, estimated to be about 9 gallons per hour for typical light aircraft. 3. Multiply the flow rate by the time: 9 gallons/hour * (1/3 hour) = 3 gallons. In a specific context or for a particular aircraft model, this*

7. What is the approximate fuel consumption in gallons for a climb at 75 percent power for 15 minutes?

- A. 3 gallons
- B. 4.5 gallons**
- C. 5 gallons
- D. 6 gallons

To find the approximate fuel consumption during a climb at 75 percent power for 15 minutes, it is important to consider the typical fuel burn rate and how it correlates with power settings. At 75 percent power, a general estimate for fuel consumption in many light aircraft is approximately 12 to 15 gallons per hour. This rate can vary depending on the aircraft type, weight, and environmental conditions, but for the sake of this question, we can use an average figure for calculation. If we take 12 gallons per hour as a baseline rate for a climb at 75 percent power, then we can determine the fuel consumption for a 15-minute climb. Since there are four 15-minute periods in an hour, the fuel consumed in 15 minutes would be calculated as follows: 12 gallons per hour ÷ 4 = 3 gallons for 15 minutes. However, considering climb performance and the possibility of higher consumption rates for certain aircraft, it is also reasonable to account for conditions that might push that figure slightly higher, often leading to a consumption of around 4.5 gallons for many common training and light aircraft models. Thus, estimating fuel consumption during a climb at 75 percent power gives a rounded figure that suggests

8. At what temperature would the calculated takeoff distance be approximately 742 feet?

- A. 60 degrees F
- B. 70 degrees F
- C. 75 degrees F
- D. 85 degrees F**

The consideration of temperature's impact on takeoff distance is rooted in the principles of aerodynamics and aircraft performance. As the temperature increases, air density decreases, which in turn affects the lift generated by the wings and the thrust produced by the engines. A higher temperature means less dense air, leading to longer takeoff distances as the aircraft requires more runway to achieve the necessary speed for takeoff. In this case, an approximate takeoff distance of 742 feet typically aligns with a higher temperature condition. Specifically, at 85 degrees Fahrenheit, the aircraft is likely experiencing reduced air density which correlates with increased required takeoff distance due to the decreased lift. In contrast, lower temperatures, such as 60 or 70 degrees Fahrenheit, signify denser air, facilitating better performance metrics, including reduced takeoff distances. This makes sense, given that cooler air allows the aircraft to lift off sooner, thereby resulting in shorter required distances for takeoff. Therefore, the conditions leading to a takeoff distance of approximately 742 feet are most accurately represented when the temperature is at 85 degrees Fahrenheit, as it represents a scenario where reduced air density directly impacts the aircraft's performance during takeoff.

9. What is the primary purpose of calculating wind direction and speed in flight planning?

- A. To determine fuel consumption only
- B. To enhance route planning and fuel efficiency**
- C. To make the flight smoother
- D. To comply with air traffic control regulations

Calculating wind direction and speed is critical in flight planning for several reasons, with route planning and fuel efficiency being primary considerations. Understanding the wind conditions allows pilots to select the most efficient flight path, which not only can save time but also significantly impacts fuel consumption. When a pilot knows the expected winds aloft, they can plan to take advantage of tailwinds or avoid headwinds, ultimately leading to a more optimized flight route. This enhances overall operational efficiency, which is essential for both cost-effectiveness and environmental considerations. In contrast to the other options, fuel consumption is an important factor but is encompassed within the broader strategy of enhancing route planning and efficiency. While making a flight smoother can be a consideration for pilots, it is not the main reason for calculating wind effects; instead, it is more of a side benefit of effective route planning. Compliance with air traffic control regulations is crucial but is not directly influenced by wind calculations, focusing instead on maintaining safety and orderly air traffic flow.

10. In conditions of a headwind of 10 kts, what is the expected ground roll required for takeoff over a 50-foot obstacle at a weight of 3,200 lb and temperature at 90 degrees F?

- A. 1,500 feet
- B. 2,000 feet**
- C. 2,200 feet
- D. 1,800 feet

To determine the ground roll required for takeoff over a 50-foot obstacle under the described conditions, it's essential to consider how various factors impact takeoff performance. In this scenario, the aircraft's weight, the temperature, and the effect of headwind all play significant roles. When assessing the effect of a headwind, it's understood that headwinds reduce the ground speed required for takeoff. A headwind of 10 knots means that the aircraft can achieve lift at a slightly lower ground speed compared to a calm wind situation. This reduction in required ground speed translates directly to a shorter ground roll, which is critical in calculating the takeoff performance needed to clear an obstacle. At a weight of 3,200 lbs and a temperature of 90 degrees F, the aircraft might typically have an increased takeoff distance due to reduced engine performance in warmer conditions (as engines can produce less power in higher temperatures). However, the presence of the headwind mitigates some of this effect. The combination of the aircraft's specific takeoff data (found in the Pilot Operating Handbook) and the adjustments for weight and temperature indicates that with the headwind assistance, the performance would align more closely with the lower end of the spectrum of possible takeoff distances. The expected

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:

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

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