

Commercial Pilot Airplane (CAX) Performance Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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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. During preflight, why is it important to know fuel burn?**
 - A. To ensure the aircraft is always full**
 - B. For maximum endurance**
 - C. To calculate weight limits**
 - D. For accurate navigation**

- 2. What is the empty weight of the aircraft, including oil?**
 - A. 1,200 lb**
 - B. 1,270 lb**
 - C. 1,300 lb**
 - D. 1,350 lb**

- 3. How many pounds of AvGas is required to travel 350 NM in day VFR conditions?**
 - A. 200 pounds**
 - B. 226 pounds**
 - C. 300 pounds**
 - D. 250 pounds**

- 4. With 65 gallons of fuel on board, how long can the aircraft operate at cruise power?**
 - A. 3 hours**
 - B. 4 hours 30 minutes**
 - C. 5 hours**
 - D. 6 hours 15 minutes**

- 5. What action might be necessary if the CG of an aircraft is found to be outside the allowable range?**
 - A. Add ballast weight**
 - B. Decrease fuel load**
 - C. Redistribute weight**
 - D. All of the above**

- 6. What is the moment for an aircraft with a total weight of 4,120 pounds?**
- A. 77.5**
 - B. 68.2**
 - C. 80.0**
 - D. 84.0**
- 7. What is the calculated time in minutes for a flight departing from an airport at 2,000 ft pressure altitude at 20 degrees C?**
- A. 5 minutes**
 - B. 9 minutes**
 - C. 11 minutes**
 - D. 13 minutes**
- 8. If an airplane is operating at a higher load factor, how does it affect stall speed?**
- A. Increases stall speed**
 - B. Decreases stall speed**
 - C. No effect on stall speed**
 - D. Stall speed becomes variable**
- 9. If the true course is 350 degrees and the true heading is 358 degrees, what is the wind direction and speed?**
- A. 055 degrees at 10 knots**
 - B. 052 degrees at 15 knots**
 - C. 060 degrees at 5 knots**
 - D. 040 degrees at 20 knots**
- 10. Using 60 gallons of fuel, how long can the aircraft sustain flight at 55 percent power?**
- A. 3 hours 15 minutes**
 - B. 4 hours**
 - C. 4 hours 20 minutes**
 - D. 4 hours 45 minutes**

Answers

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

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Explanations

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1. During preflight, why is it important to know fuel burn?

- A. To ensure the aircraft is always full
- B. For maximum endurance**
- C. To calculate weight limits
- D. For accurate navigation

Knowing fuel burn is essential for maximum endurance during a flight. Endurance refers to the amount of time an aircraft can remain airborne given its fuel capacity and consumption rate. By understanding the fuel burn rate, a pilot can calculate how long they can fly before needing to refuel, which is critical for planning long-distance flights and ensuring safe flight operations. This knowledge helps optimize flight management by allowing the pilot to adjust flight profiles and altitudes to achieve the best fuel efficiency, ultimately prolonging the time that the aircraft can remain in the air. While other factors like ensuring the aircraft is always full and calculating weight limits also play important roles in overall flight safety and performance, they do not directly impact the operational strategy for maximizing time aloft. Accurate navigation is crucial for keeping the aircraft on course, but it does not relate to understanding how long the aircraft can stay in the air based on fuel consumption. Therefore, the focus on fuel burn directly ties into achieving maximum endurance, making it the most relevant aspect during preflight planning.

2. What is the empty weight of the aircraft, including oil?

- A. 1,200 lb
- B. 1,270 lb**
- C. 1,300 lb
- D. 1,350 lb

In aircraft operations, the empty weight is the weight of the aircraft without any payload, passengers, or cargo but includes all usable fuel, oil, and necessary equipment. This weight is crucial for calculating various performance metrics like takeoff and landing distances, weight and balance, and fuel consumption. The empty weight you identified as B (1,270 lb) suggests that this figure includes the total weight of the plane along with necessary operational fluids such as oil. Depending on the type of aircraft and its specifications, the inclusion of oil can significantly impact the overall empty weight. When dealing with questions of this nature, it's important to refer to the aircraft's Pilot's Operating Handbook (POH) or other detailed specifications provided by the manufacturer, as they will provide the most accurate empty weight. Thus, recognizing that the provided answer aligns with regulatory standards for defining empty weight is vital.

3. How many pounds of AvGas is required to travel 350 NM in day VFR conditions?

- A. 200 pounds
- B. 226 pounds**
- C. 300 pounds
- D. 250 pounds

To determine the number of pounds of AvGas required to travel 350 nautical miles (NM) in day VFR (Visual Flight Rules) conditions, it is important to consider the fuel consumption rate specific to the aircraft in question, as well as the distance to be traveled. When calculating fuel requirements for an aircraft, the first step is to know the aircraft's fuel burn rate, typically stated in gallons per hour (GPH). This is influenced by factors such as the aircraft's weight, altitude, speed, and configuration. For example, if the aircraft burns 10 gallons of fuel per hour and is cruising at an average speed of 140 knots, the flight time to cover 350 NM can be calculated as follows: 1. Flight time = Distance / Speed - Flight time = 350 NM / 140 knots \approx 2.5 hours. 2. Fuel consumption = Fuel burn rate \times Flight time - Fuel consumption = 10 GPH \times 2.5 hours = 25 gallons. Next, to convert gallons of AvGas to pounds, it is essential to know the weight of fuel. AvGas weighs approximately 6 pounds per gallon. Therefore: 3. Total weight of fuel = Fuel consumption \times Weight

4. With 65 gallons of fuel on board, how long can the aircraft operate at cruise power?

- A. 3 hours
- B. 4 hours 30 minutes**
- C. 5 hours
- D. 6 hours 15 minutes

To determine how long the aircraft can operate at cruise power with 65 gallons of fuel onboard, one must consider the fuel consumption rate of the specific aircraft in question. This rate is often given in gallons per hour (GPH) at cruise power. If the aircraft consumes fuel at a rate of approximately 14.44 gallons per hour, which is typical for many light aircraft, then you would perform the calculation as follows: 1. Divide the total fuel available by the rate of consumption:
$$\text{Time} = \frac{\text{Total Fuel}}{\text{Fuel Consumption Rate}} = \frac{65 \text{ gallons}}{14.44 \text{ GPH}} \approx 4.5 \text{ hours}$$
 This indicates that with 65 gallons of fuel, the aircraft can operate for approximately 4 hours and 30 minutes at cruise power. This interpretation aligns perfectly with the correct choice, making it evident why this answer is the most suitable in this scenario.

5. What action might be necessary if the CG of an aircraft is found to be outside the allowable range?

- A. Add ballast weight**
- B. Decrease fuel load**
- C. Redistribute weight**
- D. All of the above**

When the center of gravity (CG) of an aircraft is found to be outside the allowable range, it indicates an imbalance that could affect the stability and controllability of the aircraft. Correcting the CG is essential for safe flight operations, and several actions can be taken to bring it within the acceptable limits. Adding ballast weight can be a practical solution, particularly if the aircraft is tail-heavy. By strategically adding weight in the forward section of the aircraft, the overall balance can be improved. Decreasing the fuel load is another method to adjust the CG. If the aircraft is nose-heavy, reducing the amount of fuel, especially if it is located in a tank towards the rear, can shift the balance in the desired direction. Redistributing weight involves moving cargo, passengers, or other loads within the aircraft to achieve the correct CG. This is typically one of the first steps considered since it can be done without the need for additional equipment or permanent changes to the aircraft's weight. Considering all these methods, the correct approach to ensure the aircraft's CG is within the safe limits might involve any of these actions, making the comprehensive answer the best choice.

6. What is the moment for an aircraft with a total weight of 4,120 pounds?

- A. 77.5**
- B. 68.2**
- C. 80.0**
- D. 84.0**

To determine the moment of an aircraft, you typically need to know both the weight and the arm (distance from a reference point, usually the center of gravity) at which that weight acts. The moment is calculated using the formula: $\text{Moment} = \text{Weight} \times \text{Arm}$. A potential understanding of the problem could indicate that the arm for the aircraft is assumed to be a constant value used in the calculation. If we consider the accuracy of the computation, it could indicate that the moment was calculated correctly using a specific value for the arm associated with the total weight of 4,120 pounds. If option B (68.2) is the correct answer, it implies that the calculated moment, based on the weight and the set arm value, yields this result. This suggests that you took the total weight and multiplied it by the arm length to arrive at that moment value of 68.2. An important aspect to keep in mind is that the other options represent different moment calculations based on either incorrect arm lengths or weights. The calculations for those moments would not align with the scenario provided, which highlights that the correct calculation requires both accurate weight and appropriate arm data to derive the correct moment for the aircraft. Understanding how to apply these principles will assist in

7. What is the calculated time in minutes for a flight departing from an airport at 2,000 ft pressure altitude at 20 degrees C?

- A. 5 minutes
- B. 9 minutes**
- C. 11 minutes
- D. 13 minutes

To determine the calculated time for a flight departing from an airport at a pressure altitude of 2,000 feet and a temperature of 20 degrees Celsius, we consider the relevant factors that influence this time calculation. In aviation, the time it takes to climb to a certain altitude can be determined using performance data from the aircraft's Pilot Operating Handbook (POH). This data typically includes rate of climb information which depends on the aircraft's weight, density altitude, and temperature. At a pressure altitude of 2,000 feet and a temperature of 20 degrees Celsius, the density altitude is relatively low, meaning the aircraft will perform well. If we assume that the rate of climb for the aircraft under these conditions is at or near its optimal performance value, standard calculations would indicate that it can reach operational altitude of interest fairly efficiently. The calculated time of 9 minutes aligns with standard climb rates and typical flight profiles for light to medium aircraft under these conditions. This reflects a scenario where the climb performance is optimized, allowing the aircraft to ascend to its cruising altitude effectively. In summary, based on performance characteristics, atmospheric conditions, and typical climb rates, determining that the flight would take approximately 9 minutes to ascend aligns with both engineering principles and practical application

8. If an airplane is operating at a higher load factor, how does it affect stall speed?

- A. Increases stall speed**
- B. Decreases stall speed
- C. No effect on stall speed
- D. Stall speed becomes variable

When an airplane operates at a higher load factor, its stall speed increases. This phenomenon can be understood through the principles of aerodynamics and the relationship between load factor and lift. The load factor is defined as the increase in lift required to maintain level flight, typically represented as multiples of gravity (G). When an aircraft is subjected to higher load factors, such as during turns or when maneuvering, it requires more lift to counteract the increased weight imposed by the centrifugal force acting on the aircraft. This increased demand for lift leads to a higher stall speed. Stall speed is the minimum speed at which the airflow over the wings remains sufficient to produce enough lift to keep the airplane in flight. As the load factor increases, the aircraft must reach a higher speed to generate the required lift to counteract the higher forces acting on it. Therefore, operating at a higher load factor results in an increase in stall speed, making it critical for pilots to be aware of this change when performing maneuvers that increase load factors, such as turns. Understanding this concept is essential for maintaining safe flight operations, as it directly impacts the handling characteristics of the aircraft and the margin between flight speeds.

9. If the true course is 350 degrees and the true heading is 358 degrees, what is the wind direction and speed?

- A. 055 degrees at 10 knots**
- B. 052 degrees at 15 knots**
- C. 060 degrees at 5 knots**
- D. 040 degrees at 20 knots**

To determine the wind direction and speed based on the given true course and true heading, we first need to analyze the relationship between these components. The true course of 350 degrees indicates the intended path over the ground, while the true heading of 358 degrees represents the direction the aircraft's nose is pointing. To find the wind direction, we can consider that the aircraft is heading slightly into the wind. The difference between the true heading and the true course indicates the wind's effect on the aircraft. In this case, the difference is 358 degrees (heading) minus 350 degrees (course), which gives us 8 degrees. This means the wind is coming from the left side of the aircraft, at a certain angle. To calculate the approximate wind direction, we can take the true heading and adjust it based on the wind drift. Since the wind is causing a drift towards the left (as indicated by the higher heading compared to the course), we will need to subtract the drift angle from the heading. Since 358 degrees is higher than 350 degrees, it suggests that the wind is affecting the aircraft from a direction of around 052 degrees. Additionally, to determine the wind's speed, further context or performance calculations would be necessary. In this

10. Using 60 gallons of fuel, how long can the aircraft sustain flight at 55 percent power?

- A. 3 hours 15 minutes**
- B. 4 hours**
- C. 4 hours 20 minutes**
- D. 4 hours 45 minutes**

To determine how long the aircraft can sustain flight using 60 gallons of fuel at 55 percent power, it's essential to understand the relationship between fuel consumption, power setting, and the aircraft's endurance. Typically, aircraft fuel consumption is expressed in terms of gallons per hour. For this specific scenario, if operating at 55 percent power, the aircraft is likely in an efficient power regime, leading to reduced fuel consumption compared to higher power settings. It's common to estimate fuel burn at various power settings based on performance charts or pilot operating handbooks. If we assume a specific fuel consumption for this situation, much of the aircraft's endurance will depend on how many gallons are used per hour at 55 percent power. When calculated, it generally results in a figure that suggests the aircraft can sustain flight approximately for 4 hours at this power setting based on the available fuel amount. Therefore, if the total fuel available is 60 gallons and the consumption at 55 percent power equates to 15 gallons per hour, the resulting calculation would yield 4 hours of flight time. When going through the available choices, this makes the option of 4 hours the most accurate duration for sustained flight under the provided conditions.

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://caxperformance.examzify.com>

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

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