

# TAKEOFF PLANNING QUIZ

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1. What is the takeoff distance for your aircraft at max gross weight at your airport under the current ambient conditions?
2. What piloting technique/procedure will yield that result?
3. If this is a short field technique, what adjustment should you make to that calculation if you do a normal takeoff?
4. What engine instrument(s) would indicate that you have full power on takeoff?
5. What engine adjustments should be made to develop full power for higher density or pressure altitude?
6. What calculation adjustments would be made for higher weight?
7. Would the indicated airspeed for rotation ( $V_r$ ) be changed for different atmospheric conditions at the same weight?
8. At what point (runway marking or landmark) should be lifting off the runway?
9. What will you do if the aircraft is not airborne by the point?
10. How much distance will it take to abort at rotation speed (accelerate/stop distance)? How can you estimate this?
11. If you attempt to re-land immediately after liftoff due to extreme circumstances, how much distance it will take from the start of the takeoff roll. How can you estimate this distance?
12. What are  $V_x$  and  $V_y$ ?
13. What speed will you use to clear obstacles?
14. When do you retract flaps and gear (if applicable) when clearing obstacles is a consideration?
15. What rate of climb would you expect at  $V_y$  and how will this change with different conditions?
16. What will you do if you suspect a partial power loss:
  - A. On takeoff roll?
  - B. Airborne within or close to airport boundary?
  - C. Below 500 feet AGL?
  - D. Above 500 feet AGL?
  - E. What will you check in the cockpit to restore full power?

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17. What airspeed will keep you airborne for the most time?
18. What pitch change, if any will be required to achieve best glide if the engine fails entirely?
19. What decisions are made for different altitudes with a total power loss on takeoff?
20. What landing sites are there off airport for the specific runway in use?
21. How much altitude is lost in a 180 degree turn with no power best glide? 225 degree turn? 270 degree turn?
22. How much altitude should you have to return to the airport property with a complete power loss?
23. How will the wind influence your choice of turn and runway (or airport surface) you select for return?
24. What should you check to restore power?
25. What steps should be taken before touchdown when making an emergency landing off airport?



**Do you have a plan should your engine fail at the worst possible time?**

