

USAF Aero Club Pre-Solo Exam

Name: \_\_\_\_\_ Date Completed: \_\_\_\_\_  
*PRINT*

Raw Score: \_\_\_\_\_ Date Corrected to 100% \_\_\_\_\_

I certify that all items were thoroughly debriefed and all questions answered.

\_\_\_\_\_  
*Student Signature*

\_\_\_\_\_  
*Instructor Pilot Signature*

**Pre-Solo Exam**

1. (True/False) - No student pilot may operate an aircraft in solo flight unless that student's pilot certificate and logbook have been endorsed within the last 90 days by an authorized flight instructor for the make and model of aircraft to be flown for solo flight.
2. (True/False) - A student pilot may not act as pilot in command of an aircraft carrying passengers or cargo, for compensation or hire or for the furtherance of a business.
3. (True/False) - A student pilot may not fly when flight or surface visibility is less than 1 statute miles during daylight or 3 statute miles at night and the flight must be made with visual references to the surface.
4. (True/False) – When flying solo, the student pilot is the pilot in command and has the final authority and responsibility for the flight.
5. Discuss what preflight action concerning the airport and aircraft performance is specified in the regulations for a local flight. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. (True/False) – According to the FAR's, you should not fly as pilot of a civil aircraft within 12 hours after consumption of any alcoholic beverage.
7. (True/False) During engine run up, you cause rocks, debris, and propeller blast to be directed toward another aircraft or person. This is considered careless or reckless operations of an aircraft.
8. (True/False) - The minimum fuel reserve for day VFR flight is one hour and 45 minutes for night.
9. (True/False) - Each required crewmember shall keep the seatbelt fastened anytime that the aircraft is in motion. Each passenger shall keep their shoulder harness fastened during takeoffs and landings only.

10. (True/False) - A transponder with Mode C is required at all times in all airspace at and above 10,000 feet MSL, excluding that airspace at and below 2500 feet, except in Alaska.
11. What aircraft certificates and documents must be on board when you are flying solo?  
 A \_\_\_\_\_ O \_\_\_\_\_  
 R \_\_\_\_\_ W \_\_\_\_\_
12. (True/False) - No person may operate an aircraft so close to another aircraft as to create a(n) collision hazard.
13. (True/False) - When two aircraft are on final approach to land at the same time, the aircraft closest to the runway has the right-of-way.
14. Except when necessary for takeoffs and landings, what are the minimum safe altitudes when flying over congested and other than congested areas?  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
15. If an altimeter setting is not available at an airport, what setting should you use before departing on a local flight? \_\_\_\_\_
16. (True/False) - When practicing constant altitude turns, stalls, and maneuvering at slow airspeeds, the entry altitude must allow a recovery to be completed no lower than 1,500 feet AGL.
17. What general steps should you follow after an engine failure in flight? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
18. What altitudes should you use when operating under VFR in level cruising flight at more than 3,000 feet AGL? \_\_\_\_\_  
 \_\_\_\_\_
19. (True/False) - A go-around is appropriate anytime that the pilot is not satisfied with the approach or unsure that a safe landing can be made.

## AIRCRAFT QUESTIONS

Please answer the Aircraft Questions referring to the Pilots Information Manual for the C-172Q. All of the C-172's have the Penn Yan conversion. Penn Yan is very vague on performance figures for the conversions, however, **for "TRAINING & REFERENCE" purposes "ONLY"** the 172Q Manuals will be more beneficial than Penn Yan.

20. Fill in the V-speed definitions and the corresponding speed for your training airplane only. All airspeeds listed are KIAS.

	<u>DEFINITION</u>	<u>KIAS</u>
(Vso)	_____	_____
(Vs1)	_____	_____
(Vx)	_____	_____
(Vy)	_____	_____
(Vfe)	_____	_____
(Va)	_____	_____
(Vno)	_____	_____
(Vne)	_____	_____

21. What is the best glide speed? \_\_\_\_\_

22. What is the maximum allowable flap setting for takeoff? \_\_\_\_\_

23. The total usable fuel capacity for the following aircraft is:

73813 \_\_\_\_\_

6594D \_\_\_\_\_

52842 \_\_\_\_\_

453SP \_\_\_\_\_

24. On a standard day, at 2000' PA, the fuel consumption rate during normal cruise (approx. 75% power) is: \_\_\_\_\_ gph,

25. The maximum oil capacity is: \_\_\_\_\_ quarts.

The minimum oil capacity to begin a flight is: \_\_\_\_\_ quarts.

26. The maximum crosswind component specified by your instructor for solo takeoffs and landings in the training aircraft is \_\_\_\_\_ knots.

27. Compute the takeoff distance at maximum gross weight from the following information:

Temperature: 20° C.

Pressure Alt: S.L.

Ground Roll: \_\_\_\_\_ Distance over 50': \_\_\_\_\_

28. Compute Time, Fuel and Distance to climb from Sea Level to 4000 Ft.

Time (min) \_\_\_\_\_ Fuel used (gal) \_\_\_\_\_ Distance (nm) \_\_\_\_\_

29. Compute the landing distance (Short field) for dry, grass runway, 6-knot tailwind and full flaps. Please show how you arrived at your answer.

Temperature: 30° C.

Pressure Alt: 2000 feet

Ground Roll: \_\_\_\_\_ Distance over 50': \_\_\_\_\_

30. Compute the following: You are landing on runway 16 and the wind is reported 210° at 20 knots.

Crosswind Component \_\_\_\_\_ Headwind Component \_\_\_\_\_

31. Compute total weight, arm and moment for yourself (solo) with full fuel and survival kit for whichever model you fly. Use the POH for N6594D.

<u>N6594D</u>	WEIGHT	ARM	MOMENT
Empty Weight:	_____	_____	_____
Pilot:	_____	_____	_____
Fuel: ____gals	_____	_____	_____
Baggage:	_____	_____	_____
TOTAL:	_____	_____	_____

### **AIRPORT AND LOCAL AIRSPACE QUESTIONS**

32. What is CTAF? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

33. (True/False) - A large "X" painted on runways or taxiways indicate that you are to land on that "X".

34. If Elmendorf Tower does not give you a climbing departure, what is the maximum altitude you should maintain until clear of the segment? \_\_\_\_\_

35. At Elmendorf, what is the traffic pattern altitude for these aircraft?

C172 \_\_\_\_\_

C130 \_\_\_\_\_

F15 \_\_\_\_\_

36. From the previous question, what dictates pattern altitude for the aircraft mentioned?

\_\_\_\_\_

37. (True/False) - A pilot should not compromise safety or violate a FAR; it is the pilots responsibility to request an amended clearance.

38. What is the meaning of each of the following ATC light Signals?

IN FLIGHT:

Steady Green - \_\_\_\_\_

Flashing Green - \_\_\_\_\_

Steady Red - \_\_\_\_\_

Flashing Red - \_\_\_\_\_

Alternating Red & Green - \_\_\_\_\_

ON THE GROUND:

Steady Green - \_\_\_\_\_

Flashing Green - \_\_\_\_\_

Steady Red - \_\_\_\_\_

Flashing Red - \_\_\_\_\_

Flashing White - \_\_\_\_\_

Alternating Red and Green - \_\_\_\_\_

39. (True/False) - On a Sectional chart, a dashed magenta line around an airport indicates Class "G" airspace.

40. (True/False) - The minimum visibility and ceiling requirements for VFR flight in Class "D" airspace is 3 sm and 1,500 foot ceiling.

41. (True/False) - A student pilot may request a special VFR clearance in Class "D" airspace when visibility is less than three miles.

42. (True/False) - Two-way radio communications with EDF control tower must be established and maintained prior to and within Class "D" airspace.

43. (True/False) – The upper limit of Class "C" airspace is usually 4,000 feet MSL.

44. (True/False) – You have called ATC prior to entering Class "C" airspace and the controller responds with your call sign and tells you to, "Standby." You are now allowed to enter Class "C" airspace without any further instructions.

45. What radio calls are recommended in the traffic pattern at a non-towered airport?

\_\_\_\_\_  
\_\_\_\_\_

46. (True/False) – In a non standard traffic pattern, all turns are to the left.

47. What equipment is required to operate in Class "C" airspace? \_\_\_\_\_

\_\_\_\_\_

48. (True/False) – Mode C is only required in Alaska.
49. What procedures are required if you are returning to Elmendorf and your radio is inoperative? \_\_\_\_\_  
\_\_\_\_\_
50. When should the phrase “Student Pilot” be used when you are flying? \_\_\_\_\_  
\_\_\_\_\_