

PRE-SOLO WRITTEN EXAM

The Erick Teeters Amazing Pre-Solo Written Exam for Amazing Students

PIPER PA-28-151 WARRIOR · SALINAS MUNICIPAL, KSNS · 14 CFR 61.87(B) · 34 ITEMS

STUDENT NAME	DATE	AIRCRAFT N-NUMBER
INSTRUCTOR	CFI CERTIFICATE NO.	SCORE

BEFORE YOU START

This is the pre-solo aeronautical knowledge test required by 14 CFR 61.87(b). Answer every question. Your instructor grades it with you and you correct every item you miss, so a wrong answer today costs you nothing. Do not guess. If you do not know something, leave it blank and say so.

Numbers in the answer choices come from the PA-28-151 handbook, part 761 563. The POH in the airplane is still the authority. If a figure here and a figure in the airplane disagree, the airplane wins.

01 AIRSPEEDS

Every speed in this airplane is miles per hour, not knots. The limits are in the Flight Manual on page 3-2. Vy is on page 1-1 and best glide is on page 4-2. Vr and Vx are not published as V-speeds in this handbook at all, so read the Takeoff procedure on page 7-5 and write down what it tells you.

1 Fill in every row. The purpose column matters as much as the number.

V-SPEED	MPH	WHAT IT IS FOR
Vne		
Vno		
Va		
Vfe		
Vr		
Vx		
Vy		
Vs1		
Vso		
Best Glide		

02 THE PATTERN AT SALINAS

Runway 31 unless stated otherwise. Read each one all the way through before you mark a box.

- 2 You are three miles out on the 45 for runway 31. You report and state your altitude as 2,500 feet. Another aircraft reports the same position but does not give its altitude. What should you do to avoid that traffic safely?
- ☐ A Climb immediately
 - ☐ B Request the altitude of the other aircraft
 - ☐ C Descend immediately
- 3 What type of airspace is Salinas?
- ☐ A Class A
 - ☐ B Class C
 - ☐ C Class D
- 4 You are on final for runway 31 and you have just added your last notch of flaps when another aircraft that was holding short taxis onto the runway to take off. Describe your radio communication and your procedure for safely going around.
- ☐ A Full power, climb, clean, contact tower
 - ☐ B Full power, climb, clean, offset right of the runway
 - ☐ C Full power, climb, clean, voice disgust for the other pilot on the radio
- 5 The tower asks you to extend downwind for traffic. When should you start the GUMPS checklist?
- ☐ A Abeam the numbers
 - ☐ B When you turn base inside 3 miles
 - ☐ C When you turn final outside 3 miles
 - ☐ D Both B and C
- 6 You see the traffic on final that you are supposed to follow. When should you start your base turn to keep traffic separation?
- ☐ A On downwind, abeam the traffic on final
 - ☐ B When the other traffic touches down
 - ☐ C When the other traffic clears the runway

- 7 You are about to enter the pattern and your radio is not working. You cannot hear anyone, and you are not sure whether they can hear you. What do you do?
- ☐ A Check your volume
 - ☐ B Make sure you are on the right frequency
 - ☐ C Make sure you are on the right COM
 - ☐ D Enter the pattern normally or as instructed and look for the light gun signal
 - ☐ E All of the above

03 SYSTEMS AND EQUIPMENT

Your airplane, not a Cessna, not the one in the book you borrowed. Check anything you are unsure of against the POH before you mark it.

- 8 What type of engine does your airplane have?
- ☐ A Lycoming O-320-E3D
 - ☐ B Lycoming O-320-A1A
 - ☐ C Lycoming O-360-A1A
- 9 When do we use the electric fuel pump on the Warrior?
- ☐ A Takeoff, landing, and switching tanks
 - ☐ B When the engine driven pump fails
 - ☐ C During the starting procedure
 - ☐ D All of the above
- 10 How do the brakes work?
- ☐ A Hydraulic brakes on each main gear
 - ☐ B Electric brakes on each main gear
 - ☐ C Hand brake on each main gear
- 11 How do the flaps work?
- ☐ A Electric motor driven
 - ☐ B Hand bar mechanical
 - ☐ C Magic
- 12 How many gallons of fuel does it hold, usable and total?
- ☐ A 48 gallons usable, 50 total
 - ☐ B 48 gallons usable, 52 total
 - ☐ C 46 gallons usable, 48 total

13 What is the maximum gross weight?

- ☐ A 2,325 lb
- ☐ B 2,300 lb
- ☐ C 2,355 lb

14 The oil capacity of the O-320-E3D is 8 quarts. What does the POH give as the minimum safe quantity?

- ☐ A 2 quarts
- ☐ B 4 quarts
- ☐ C 6 quarts

Now go to the oil grade table on page 10-8. For the temperature you will be flying in today, write the temperature range and the grade you would use.

The POH minimum safe quantity is not the same thing as a dispatch minimum. Ask your instructor what North Aero requires in the sump before you go flying.

15 You are in the runup area and notice the left fuel quantity indicator has failed. Is it OK to go flying?

- ☐ A No
- ☐ B Yes
- ☐ C Maybe

04 AERODYNAMICS

The wing does not care how many hours you have. Answer these the way the wing behaves, not the way it feels.

16 When does an airplane stall?

- ☐ A Any time and any place
- ☐ B When the wing exceeds the critical angle of attack
- ☐ C When the wing angle of attack is too high

17 What is the difference between a forward slip and a side slip?

- ☐ A Forward slips are to correct for crosswind
- ☐ B Forward slips are to lose altitude without gaining airspeed
- ☐ C Side slips are to lose altitude without gaining airspeed

- 18 In a 60 degree bank turn with no flaps, by what percentage does the stall speed increase over the level flight stall speed? (*Square root of the increase in load factor, multiplied by the level flight stall speed. Or read it off the chart.*)
- ☐ A 41 percent
- ☐ B 44 percent
- ☐ C 28 percent
- 19 Are spins approved in this airplane?
- ☐ A Yes, in Utility category only
- ☐ B Yes, in both Normal and Utility category
- ☐ C No. Spins are prohibited in both Normal and Utility category
- 20 You get into one anyway. How do we recover from a spin?
- ☐ A Power idle, ailerons full, rudder opposite, elevator forward
- ☐ B Power idle, ailerons neutral, rudder opposite, elevator first floor
- ☐ C Power idle, ailerons neutral, rudder opposite, elevator forward
- 21 You are turning to the left and the ball is swung to the right, the opposite direction of the turn. What are you doing to the airplane?
- ☐ A Slipping
- ☐ B Flying coordinated
- ☐ C Skidding

05 EMERGENCIES AND ABNORMALS

Write these in your own words. If you cannot write it on the ground, you will not fly it in the air.

- 22 What should we check when we apply full power on takeoff?
- ☐ A RPM, oil pressure, airspeed
- ☐ B Heading, oil pressure, airspeed
- ☐ C RPM, oil temperature, airspeed
- 23 What is the most dangerous situation a pilot can encounter?

24 List the procedure for an in-flight engine failure, in order.

A

B

C

D

E

F

25 The engine is starting to get a little rough. You are at 6,500 feet, you can see the RPM fluctuating, and it appears to be getting worse. What would you do to remedy the situation and stay safe?

- ☐ A Pitch the aircraft for best glide
- ☐ B Find a place to land
- ☐ C Complete the appropriate emergency checklist
- ☐ D All of the above

26 The same situation as above, except instead of 6,500 feet you are on the downwind leg for 31 at 1,000 feet. What do you do?

- ☐ A Switch fuel tanks
- ☐ B Just land the aircraft immediately
- ☐ C Turn on your fuel pump
- ☐ D All of the above

06 REGULATIONS AND AIRWORTHINESS

Solo means the certificate, the airplane, and the decision are all yours. These are the rules that make that legal.

27 You are flying solo and notice a cloud layer ahead. Can you fly over the cloud layer?

- ☐ A Yes I can
- ☐ B No I cannot

28 What documents must be on your person before embarking on a solo flight?

- ☐ A Logbook with endorsement, certificate, driver's license
- ☐ B Logbook with endorsement, certificate, driver's license, medical
- ☐ C Logbook with endorsement, certificate, driver's license, medical, organ donor card

- 29 Who is responsible for determining whether the aircraft is airworthy?
- ☐ A The flight instructor
 - ☐ B The pilot in command
 - ☐ C The owner or operator
- 30 You had a drink 7 hours ago, last night on your binge in Los Banos. Can you go flying? How many hours do you have to wait, and what blood alcohol level is allowed? What level will your instructor be at if he does find out you have been flying under the influence? How does alcohol hinder your flying performance?
- ☐ A No. 8 hours, .04 BAC, .40 BAC, and it makes you react poorly and impairs your judgment
 - ☐ B Yes. 7 hours, .04 BAC, .40 BAC, and it makes you react poorly and impairs your judgment
 - ☐ C No. 8 hours, .08 BAC, .40 BAC, and it makes you react poorly and impairs your judgment
- 31 What does AROW stand for?
- A _____
- R _____
- O _____
- W _____

07 THE PILOT

The airplane is the easy part. Everything below is about the person flying it.

- 32 Why do we use the PAVE checklist?
- ☐ A To make sure we can fly OK
 - ☐ B To make an appropriate go / no go decision
 - ☐ C To satisfy the FAA
- 33 What is IMSAFE?
- I _____
- M _____
- S _____
- A _____
- F _____
- E _____

- 34 On a scale of 1 to 10, how much fun is flying? How great is it to know that through all the difficulty, the plateaus, and the disgruntled flight instructors, you have become the PIC of your own airplane?
- ☐ A 9
- ☐ B 10
- ☐ C 11

For once you have tasted flight you will walk the earth with your eyes turned skywards, for there you have been and there you will long to return.

Leonardo da Vinci

STUDENT SIGNATURE	DATE
INSTRUCTOR SIGNATURE	CERTIFICATE NO. AND EXPIRATION

By signing above, the instructor certifies that this test was administered and graded, and that every missed item was reviewed and corrected with the student, per 14 CFR 61.87(b).

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Retain in the student training file. Figures in the answer choices are study material. The POH in the airplane is the authority.