WCFC Piper PA28 Warrior Quiz

Review before : 2025-03-26

Quiz ID : **12828**

Instructor :		Date :
Pilot :	Member # :	Score :

Instructor : Please note the final score (subtract 3.0 points from 100 for each wrong answer) on the checkout form and file the quiz in the Pilot Records folder.

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1 : According to the Warrior AFM/POH, engine fires during starting are usually caused by...

A : cranking the starter excessively, thus flooding the engine

B : priming with the auxiliary boost pump

C : attempting to start the engine with the magnetos energized

D : over-priming

E : allowing fuel to vaporize on a hot day

2 : According to this representation of the G5 is Electronic Stability Protection enabled or disabled?

A : Disengaged

B : Enabled

C : Disabled

D : Standby

3 : The rated power of the engine as installed in a PA-28-161 is

A : 100 BHP

B : 125 BHP

C : 150 BHP

D : 160 BHP

4 : The engine in a PA-28-161 is a

A : Continental O-300

B : Lycoming O-320

C : Lycoming O-235

D : Lycoming O-540

5 : Which of these is a stated reason for NOT operating the fuel boost pump in normal flight?

A : The electric fuel pump should be normally .. OFF .. so that any malfunction of the engine driven fuel pump is immediately apparent.

B : The electric fuel pump can easily flood the engine in cruise flight at certain altitudes.

C : The electric fuel pump is limited to no more than thirty minutes of continuous operation.

D : Switching tanks with the electric fuel pump on may introduce air into the fuel lines and interfere with fuel flow.

E : The electric fuel pump can energize the primer lines and flood the engine at low-power operations.

6 : In the combination G5 and G500 autopilot installed in the WCFC PA28.161 Warriors, once engaged, the torque applied by ESP is at its maximum when bank angle ...

A : exceeds a prudent bank angle for more than 5 seconds

B : exceeds a roll rate of 45 degrees per second

C : is accompanied by a loss or gain of more than 175 feet of altitude

D : is 15 degrees more than the configured bank limit.

E : the trim malfunctions and produces a runaway condition requiring immediate disabling of the electric trim

7 : The correct type of fuel for the PA-28-161 (excepting any special STC) is

A : Aviation 80, 100LL, or 100/130 fuel

B : Automotive high test

C : Aviation 100LL or 100/130 fuel (100LL preferred)

D : Aviation 100LL (light blue) fuel only

8 : When flying with the Garmin G5 instrument, wearing polarizing eyewear ...

A : is not recommended at night

B : will reduce glare and improve the visibility of the display

C : is entirely optional

D : may cause the display to appear dim or blank

E : is unnecessary unless the eyewear is polarized strictly in the vertical axis

9 : If an electrical fire occurs, which sequence of actions is recommended?

A : Cabin vents should be opened. A fire extinguisher, if available, should be used to suppress the source of the fire. Turn off all electrics.

B : The master switch should be turned "OFF." Cabin vents should be closed. Land as soon as possible.

C : Pull all circuit breakers to isolate the source of the fire. Cabin vents should be closed. Land as soon as practicable.

D : The master switch should be turned "OFF." The Cabin vents should be opened. Cabin heat turned "OFF." A landing should be made as soon as possible

E : Turn off all non-essential electricals. Pull the flap circuit breaker. Land as soon as possible.

10 : When the ESP system that is an integral part of the G5 and the GFC 500 AFCS has been engaged for more than 10 seconds (cumulative; not necessarily consecutive seconds) of a 20-second interval, what happens?

A : A warning alert "Pitch down" is heard.

B : Flight controls are locked for five seconds to prevent further excursions in pitch and bank

C : The autopilot is immediately disengaged, returning control to the pilot for safety.

D : The autopilot engages in Level (LVL) mode

E : The ESP system disengages to prevent over-driving the pitch and roll servos.

11 : The type of oil normally in the engine should be ...

A : SAE rated SE (severe environment) multi-viscosity

B : Aviation grade ashless dispersant (AD) of appropriate viscosity

C : High quality automotive type high detergent (HD) motor oil

D : Aviation grade "straight mineral oil"

E : Aviation grade multi-viscosity synthetic oil

12 : Using the Performance Charts of the AFM/POH for N8080A, serial number 18-8016051, the true airspeed in cruise will be _____ under the following conditions ... (Use the original maximum gross weight of 2325 pounds.)

Condition	Data
Cruise Pressure Altitude	8,000 feet
OAT at cruise altitude	15 Celsius
Cruise Power	65% best power
Wheel fairings	not installed
Gross weight	2325 pounds

13 : What is the most current CG (Center of Gravity) in the WCFC record for N64TZ?

14 : What would be the calculated cruise speed (True Airspeed) using the parameters below? (Use N8080A for performance calculations.)

- NOTE:
- Fuel to tabs (34 gallons usable)
- Wheel fairings not installed
- Max Gross Weight 2325 pounds
- Best power mixture setting
- 65% power
- 8000 foot pressure altitude
- OAT (at altitude) 40F

A : 122 knots TAS
B : 111 knots TAS
C : 113 knots TAS
D : 106 knots TAS

15 : How is a total loss of alternator output detected in the PA28-161?

A : A total loss of alternator output is detected through a zero reading on the voltmeter.

B : A total loss of alternator output is detected through a zero reading on the ammeter.

C : A total loss of alternator output is detected through a warning displayed on the SYSTEMS page of the GNS 650

D : A total loss of alternator output is detected by loss of the turn coordinator and the G5 attitude indicator and/or HSI if installed.

E : A total loss of alternator output is detected the popping of the ALT circuit breaker.

16 : The maximum gross takeoff weight for the CHFC PA-28-161 aircraft is

A : 2000 pounds

B : 2325 pounds

C : 2350 pounds

D : 2440 pounds

17 : The normal operating range in KIAS represented by the green arc on the airspeed indicator is:

A : 126-160 KIAS

B : 44-103 KIAS

C : 50-126 KIAS

D : below 160 KIAS

18 : Do not overpower the GFC 500 Autopilot because ...

A : The autopilot will trim against your control input since it is unable to distinguish your control input from aerodynamic forces.

B : The autopilot will not respond to your control input

C : You will damage the autopilot servos

D : The autopilot will recognize your control input and will attempt to assist by trimming in the direction of your input. This function is designed to recognize and assist in an emergency.

E : The autopilot will immediately turn off and return the airplane to manual control.

19 : What would be a minimally inconvenient loading change that would suffice to make this aircraft legally flyable?

item	weight	CG (arm)	Moment (/1000)
Airplane (80A)	1521.5	86.99	132.36
Front seat	220	80.5	17.71
Rear Seat	340	118.1	40.15
Fuel (pounds)	204	95.0	19.38
Baggage	100	142.8	14.28
Totals	2385.5	93.86	223.88

A : No change is necessary.Leave 50 lbs of baggage behind.

B : Leave 50 lbs of baggage behind.

C : Offload at least one passenger.

D : Have the kid and one 170 lb passenger exchange seats.

E : 2385.5 | 93.86 | 223.88

20 : Calculate the climb performance (feet per minute) of a Club Warrior at a pressure altitude of 8,000 feet based on the following assumptions:

- Pressure altitude = 8,000 feet
- Indicated airspeed = 79 knots
- Full throttle
- OAT = 20F
- Leaned per Lycoming Instructions
- Wheel pants removed
- Weight = 2325 pounds (original max gross without the STC)
- NOTE: These calculations based on N64TZ. Others should be similar. Answers will not be precise given the imprecision of these charts. Choose the closest answer.

A : 240 feet per minute, approximately

B : 380 feet per minute, approximately

C : 210 feet per minute, approximately

D : 340 feet per minute,approximately

21 : What does STC SA00397NY, installed in some of the WCFC Warrior fleet, change about a PA28-161.

A : This STC approves the Garmin G5 electronic instrument to serve as the primary attitude indicator and fully replace the original vacuum-powered instrument.

B : The STC allows the installation of a smaller-diameter nose wheel to reduce the angle of attack on the takeoff roll and reduce the tendency to lift off prematurely in ground effect.

C : The STC grants permission to operate that serial number airplane at a maximum gross weight of 2440 pounds rather than the original 2325 pounds.

D : The STC allows the relocation of the battery from the firewall to an alternate location beneath the rear seat, which moves the CG aft (but within limits) to reduce drag and improve speed, fuel efficiency, and range.

22 : When effecting a start with an external power source, the master switch should normally be ... and the electronics should normally ...

A : master on ... electronics on

B : off... electronics on

C : off...electronics off

D : on until engine start...electronics off

E : off unless battery voltage is at least 12.5 volts...electronics off

23 : The following numbers refer to the various sources of information in the standard G5 PFD presentation as installed in the Club Warriors and integrated with the G500 Garmin autopilot. Consult the diagram and refer to the numbered items. Please fill in the blanks. #15 is the _____. #17 is the _____. #14 is the _____. #19 is the _____ #20 is the _____.

24 : When flying an autopilot coupled LNAV approach with vertical descent angle and the MDA set as an altitude preselect, what will the autopilot do at MDA?

A : The autopilot will level at the preselected MDA and continue to track the course guidance

B : The autopilot will alert arrival at the MDA and request further command

C : The autopilot will continue to descend on the vertical angle without leveling at the MDA

D : The autopilot will disengage

E : The autopilot will commence the missed approach

25 : Calculate the weight, CG, and total moment of N8080A using the data below. Choose the correct answer.

item	weight (pounds)	CG (arm)	Moment (/1000)
Airplane (80A)	1521.5	86.99	132.36
Front seat	220	80.5	17.71
Rear Seat	340	118.1	40.15
Fuel (pounds)	204	95.0	19.38
Baggage	100	142.8	14.28
Totals	---------	------	----------

A : Totals | 2385.5 | 90.23 | 223.88 |
B : Totals | 2385.5 | 92.86 | 221.51 |
C : Totals | 2585.5 | 93.86 | 242.67 |
D : Totals | 2385.5 | 93.86 | 223.88 |

26 :

- To achieve 65% power at 10,000 feet pressure altitude with an OAT of 20F requires what RPM setting? Assume best power mixture, leaned as indicated, and indicated fuel flow.
- Note that due to the inherent imprecision of these charts, choose the closest answer to your conclusion.

A : 2620 RPM
B : 2400 RPM
C : 2720 RPM
D : 2580 RPM
E : 2320 RPM

27 : Calculate the Weight and Balance for NWCFC1, a fictional PA28 with the following characteristics. What is the total weight, the CG, and is it, as loaded, within the weight and balance limits?

Item	Weight	Arm
Basic Empty Weight	1470 pounds	85 inches
Fuel	34 gallons	95
Pilot and front passenger	355 pounds	80.5
Rear seat passengers	230 pounds	118.1
Baggage Area	20 pounds	142.8

A : Weight 2259CG 91.39Yes, within limits

B : Weight 2279CG 90.58Yes, within limits

C : Weight 2279CG 87.4Yes, within limits

28 : Given the following loadings, are the Normal category weight and balance limitations met for a typical CHFC Warrior? Use the N8080A AFM/POH Weight and Balance charts.

- For this calculation, please use these numbers for N8080A c. February 2001.
- Basic empty weight = 1521.5 pounds. CG = 86.99)
- Front seats: 150 lb pilot and 70 lb child passenger
- Rear seats: two 170 lb passengers
- Fuel: fueled to tabs
- Baggage: 100 lbs

This information in tabular format:

item	weight	CG (arm)	Moment (/1000)
Airplane (80A)	1521.5	86.99	132.36
Front seat	220	80.5	17.71
Rear Seat	340	118.1	40.15
Fuel (pounds)	204	95.0	19.38
Baggage	100	142.8	14.28
Totals	------	------	----------

A : The weight is within STC limits, but the CG is too far aft.

B : No. The weight is within STC limits, but the CG is too far forward.

C : Yes. Both weight and CG are within STC limits.

D : No. This airplane is over the STC maximum gross weight.

E : Yes. But the CG is near the front limit.

29 : The active and armed modes, lateral and vertical, of the autopilot are displayed where?

A : Active modes are displayed on the HSI function of the installed G5

B : There is no separate display. The modes are recognized from the GFC 507 mode buttons, which turn red when engaged.

C : Adjacent to the GFC 507 AFCS in the GFC 500 screen

D : Autopilot (AP) status is displayed in the middle of the G5 Autopilot Status Box.

E : The autopilot (AP) modes may be displayed externally on an Ipad linked via Bluetooth to the GFC 500 AFCS system.

30 : At 2000 pounds total weight, a reasonable approximate maneuvering speed for the PA-28-161 is

A : 76 KIAS

B : 88 KIAS

C : 102 KIAS

D : 111 KIAS