



INSTRUMENT AIRPLANE SYSTEMS VALIDATION STUDY GUIDE

Flight Instruments

1. What instrument(s) does the pitot-static system supply? [POH 7-31]
2. What instrument(s) does the pitot system (ram air) supply? [POH 7-31]
3. Where is the pitot tube mounted? [POH 7-31]
4. What happens when you turn the PITOT HT switch on? [POH 7-31]
5. Where would you find the static pressure alternate source? [POH 7-31]
6. What is an indication when using the alternate static source? [PHAK 8-2]
7. What is the significance of the white arc on the airspeed indicator? [POH 2-5]
8. What is the significance of the green arc on the airspeed indicator? [POH 2-5]
9. What is the significance of the yellow arc on the airspeed indicator? [POH 2-5]
10. How does the GL275 get heading information? [Garmin GL 275 Pilots Guide 3]
11. How ADAHRS require GPS information? [GI 275 STC 15]
12. What is ADAHRS? [Garmin GI 275 Pilots Guide 3]
13. The red arrows on the GI 275 ADI point to what? [Garmin GI 275 Pilots Guide 55]
14. The aircraft is parked on the ramp with a direct head wind of 70 KTS, what will the airspeed indicate? [PHAK 8-2]
15. During the instrument cockpit check what is the tolerance for the altimeter? [PHAK 8-7]
16. What should the VSI indicate on the instrument cockpit check? [PHAK 8-8]
17. During the instrument cockpit check the GI 275 ADI should indicate_____. [GI 275 STC 44]

18. What should the Airspeed indicate on the instrument cockpit check? [PHAK 8-10]
19. How do you check the status of the ADAHRS (LRUs) on the GI 275? [GI 275 STC 51]
20. How do you check the mag compass during the instrument cockpit check? [PHAK 8-24]
21. How long does it take for the VSI to show trend information? [PHAK 8-8]
22. How long does it take for the VSI to show rate information? [PHAK 8-8]
23. What would the Airspeed indicate if the pitot tube was blocked? [PHAK 8-10]
24. What would the Airspeed indicate if the pitot tube and drain hole was blocked? [PHAK 8-10]
25. What would the Airspeed indicate if the static was blocked in a climb? [PHAK 8-11]
26. What would the Altimeter indicate if the static was blocked in a climb? [PHAK 8-11]
27. What would the VSI indicate if the static was blocked in a climb? [PHAK 8-11]
28. On the altimeter the static pressure goes into the_____. [PHAK 8-3]
29. On the airspeed indicator the dynamic pressure goes into the_____. [PHAK 8-3]
30. On the airspeed indicator the static pressure goes into the_____. [PHAK 8-8]
31. On the VSI the static pressure goes into the_____. [PHAK 8-7]
32. If the ADC fails, what indication should you see? [GI 275 STC 30]
33. If the AHRS fails, what indications should you see? [GI 275 STC 29]
34. Which are magnetic compass errors? [PHAK 8-24]
35. What is the default selection of the GI 275 ADI inner knob? [GI 275 STC 56]

- 36. How do you set the altitude bug on the GI 275 ADI? [GI 275 STC 59]
- 37. What does a magenta altitude display on the GI 275 ADI indicate? [GI 275 STC 30]
- 38. How do you set the heading bug on the GI 275 ADI? [GI 275 STC 59]
- 39. Departing KLAS with an altimeter setting 30.47, you land at KDLH with a current altimeter setting of 29.23, what altitude will you be at? [PHAK 8-2]
- 40. Arriving at KDLH, the temperature is -30C. What will your altimeter indicate? [PHAK 8-2]

Limitations

- 41. What is never exceed speed? [POH 2-4]
- 42. What is maximum structural cruising speed? [POH 2-4]
- 43. What is maneuvering speed at 1950lbs? [POH 2-4]
- 44. What is maximum flaps extended speed speed? [POH 2-4]
- 45. You suddenly need fresh air, what is maximum window open speed? [POH 2-4]
- 46. A stranger in the Signature lobby asks how much power your engine makes. [POH 2-5]
- 47. What is maximum engine speed? [POH 2-5]
- 48. The minimum oil pressure after start is _____. [POH 2-6]
- 49. What is the normal operating rage for oil temperature? [POH 2-6]
- 50. What is maximum takeoff weight? [POH 2-6]
- 51. What is maximum landing weight? [POH 2-6]
- 52. What is maximum baggage area 1 weight? [POH 2-6]
- 53. What is maximum baggage area 2 weight? [POH 2-6]
- 54. What is maximum utility weight? [POH 2-7]
- 55. What is maximum baggage compartment weight for utility category? [POH 2-7]
- 56. What is flight load factor limits with the flaps up? [POH 2-8]
- 57. What kinds of operations is the airplane equipped for? [POH 2-9]

58. Maximum fuel capacity when refueling. [POH 2-9]
59. What is takeoff and landing setting for the fuel selector? [POH 2-9]
60. The correct fuel is_____. [POH 2-9]
61. What is the minimum software version for GI 275? [GI 275 STC 18]
62. Can you use QFE with the GI 275 ADI? [GI 275 STC 18]
63. Can you use moving map as the primary or sole means of navigation or course guidance on the GI 275 HSI? [GI 275 STC 18]

Aircraft Systems

- 64. What is the construction of the fuselage? [POH 7-3]
- 65. What is the fuselage made out of? [POH 7-3]
- 66. What style flaps does the C172N have? [POH 7-3]
- 67. How are the flight controls actuated? [POH 7-8]
- 68. How are the flaps actuated? [POH 7-10]
- 69. The wing flap system is _____. [POH 7-10]
- 70. What type of landing gear does the C172N have? [POH 7-10]
- 71. What type of brakes does the C172N have? [POH 7-3]
- 72. How many cylinders does the engine have? [POH 7-16]
- 73. What controls the amount of air in the carburetor? [POH 7-16]
- 74. What controls the amount of fuel in the carburetor? [POH 7-16]
- 75. What is the capacity if the engine oil sump? [POH 7-18]
- 76. What is the minimum oil quantity to operate? [POH 7-18]
- 77. What are the R and L positions for on the ingestion switch? [POH 7-19]
- 78. What is the standard total usable fuel? [POH 7-20]
- 79. What is the total unusable fuel? [POH 7-20]
- 80. What is the total fuel? [POH 7-20]

- 81. What controls fuel flow? [POH 7-22]
- 82. How does the fuel flow in the LEFT selector valve position? [POH 7-22]
- 83. How many volts in the electrical system? [POH 7-23]
- 84. What type of current is the electrical system? [POH 7-23]
- 85. What instrument will run with the master off? [POH 7-24]
- 86. What bus bar is energized when the master is turned on? [POH 7-25]
- 87. What does the left half of the master switch control? [POH 7-25]
- 88. What supplies windshield defrost air? [POH 7-31]
- 89. What type of stall warning system do we have? [POH 7-34]
- 90. What is recommended to improve radio communities during IMC flight? [POH 7-25]