



PRIVATE PILOT STAGE THREE EXAM

AIRMAN INFORMATION

NAME

DATE

TEST ADMINISTERED BY

RECOMMENDING INSTRUCTOR

RESULTS



SBT

Today is Sunday March 10th, 2019 you are planning a trip to have Sunday brunch up in Denver with your college friend Andrew. He lives in Parker so you plan to fly up to KAPA at 0800 local, and then back home to KCOS at 1600 local.

Leg 1 KCOS – KAPA Cruise at 10,500' MSL or 11,500' MSL, as appropriate

1. Are you legal?
 - a. Yes
 - b. No, you need a Biennial Flight Review
 - c. No, you need a photo ID
 - d. No, you need a photo ID and a Biennial Flight Review
2. Is the plane legal?
 - a. Yes
 - b. No, you have multiple expired inspections that are required for this flight
 - c. No, you need an ELT inspection
 - d. No, you need a transponder inspection
3. Your friend Colin calls and wants to fly with you. Are you current to carry passengers?
 - a. Yes
 - b. No, you need one more landing
 - c. No, you need two more landings
 - d. No, you need one more night landing
4. Either way, Colin jumps in with you. What is your takeoff weight and CG?
 - a. 2,765 LBS and 142.87"
 - b. 2,794 LBS and 142.93"
 - c. 2,763 LBS and 142.83"
 - d. 2,788 LBS and 142.91"
5. What is the Density Altitude in KCOS?
 - a. 6,187'
 - b. 7,149'
 - c. 7,388'
 - d. 6,382'
6. How long are you in cruise to KAPA?
 - a. 10:04
 - b. 8:15
 - c. 7:16
 - d. 9:18
7. What frequency do you use to request entry into the class B airspace?
 - a. No one, you'll be under the DEN shelf
 - b. 128.45 MHz
 - c. 132.75 MHz
 - d. 118.9 MHz

8. What is your indicated airspeed in cruise?
- a. 124 KTS
 - b. 144 KTS
 - c. 136 KTS
 - d. 130 KTS
9. Looking down at your sectional you see the blue numbers in each block. How are MEFs calculated when there is a manmade obstacle at least 200' above the terrain?
- a. Highest obstacle, plus 100', plus 200', rounded up to the nearest 100'
 - b. Highest obstacle, plus 100', rounded up to the nearest 100'
 - c. Highest obstacle, plus 200', rounded up to the nearest 100'
 - d. Highest obstacle, plus 1000', rounded up to the nearest 100'
10. What is the top altitude of Centennial's Class D airspace?
- a. 8,000' MSL
 - b. 7,999' MSL
 - c. 8,000' AGL
 - d. 2,500' AGL
11. What is your landing ground roll on runway 35R at KAPA?
- a. 1235'
 - b. 1230'
 - c. 1244'
 - d. 1180'
12. What is your landing weight and CG at KAPA?
- a. 2,785 LBS and 143.1"
 - b. 2,715 LBS and 140.1"
 - c. 2,737 LBS and 142.2"
 - d. 2,762 LBS and 142.8"

After lunch Colin asks to be dropped off at his parent's house in Florence, so you agree to drop him off by flying direct 1V6 before flying home to KCOS. You still depart at 1600 local.

Leg 2 KAPA – 1V6 Cruise at 14,000' MSL

13. As you are doing your preflight you watch an airplane bounce a landing and strike their prop, do they need to report this to the FAA?
- a. Yes
 - b. No
 - c. No, but they need to report it immediately to the NTSB
 - d. No, but they need to report it to the FBO
14. What is your ground roll for takeoff on runway 35R at KAPA? Use 3,000 LB chart.
- a. 2,251'
 - b. 2,574'
 - c. 1,627'
 - d. 1,525'

15. On the chart you notice a lookout tower, what does the number next to it indicate?
- The base of the tower MSL
 - The base of the tower AGL
 - The height of the tower MSL
 - The height of the tower AGL
16. Colin knows about the parachuting in the area and starts telling you about random facts he has heard. Which of these are false?
- Parachutes made of nylon material must be repacked within 60 days
 - Parachutes made of silk must be repacked within 180 days
 - Unless each occupant of the aircraft wears a parachute, no PIC may intentionally make a maneuver that exceeds 30° pitch or exceeds 60° bank
- i
 - i and ii
 - iii
 - None of these are false
17. Where are you at top of climb to 1V6?
- Abeam Manitou Springs
 - Abeam Woodland Park
 - Abeam Castle Rock
 - Over Perry Park
18. Looking at the chart you notice the Alert Area, what is the magenta diamond symbol?
- Outdoor Theatre
 - Sporting TFR Site
 - Special Parachute Area
 - USAF Academy
19. What is your true airspeed in cruise?
- 151 KTS
 - 148 KTS
 - 144 KTS
 - 161 KTS
20. What does the 9500 underneath Currant Creek Pass indicate?
- The floor of the pass in MSL
 - The highest ridge of the pass in MSL
 - The minimum obstacle clearance altitude in MSL
 - The minimum required cloud ceiling to safely navigate through the pass
21. 1V6 has an AWOS-3, what information does that provide?
- Altimeter, visibility, wind, and temperature/dew point
 - Altimeter, visibility, wind, cloud/ ceiling, and temperature/dew point
 - Altimeter, visibility, wind, cloud/ ceiling, precipitation identifier, and temperature/dew point
 - Altimeter, visibility, wind, cloud/ ceiling, precipitation identifier for type/occurrence/accumulation, and temperature/dew point

22. What frequency would you use for real time information about the Airburst MOA?

- a. 126.2 MHz
- b. 128.37 MHz
- c. 122.2 MHz
- d. 122.25 MHz

23. Flying near Pikes Peak, what hazards do you need to worry about?

- a. Winds aloft that exceed 35 knots
- b. Possible downdrafts from 1,500 to 2,000 feet per minute
- c. Severe turbulence
- d. All of the above

24. Where were you at top of descent coming into Fremont?

- a. Over a dam
- b. Abeam Pikes Peak
- c. Crossing the Airburst MOA
- d. Green Mountain Falls

You drop off Colin and start your preflight planning back to KCOS. To avoid the restricted area, and to practice some VOR tracking, you decide to fly direct to PUB, then direct to KCOS. When Colin leaves he takes his 10-lb pack with him.

Leg 3 1V6 – PUB – KCOS Cruise at 10,500' MSL

25. What is your new ramp weight and CG as you leave for KCOS?

- a. 2,643 LBS and 142.1"
- b. 2,707 LBS and 142.4"
- c. 2,542 LBS and 142.3"
- d. 2,536 LBS and 143.4"

26. What is Operation Rain Check? A program to familiarize pilots and aspiring pilots with...

- a. Weather services, it's functions, responsibilities and benefits.
- b. The FAA, it's functions, responsibilities and benefits.
- c. The ATC system, it's functions, responsibilities and benefits.
- d. Flight Service, it's functions, responsibilities and benefits.

27. What is your takeoff distance over a 50' obstacle on runway 29? Use 2,500 LB chart.

- a. 3,490'
- b. 2,285'
- c. 2,792'
- d. 1,854'

28. What is the minimum safe altitude over a sparsely populated area or open water?

- a. No closer than 500' to any person, vessel, vehicle or structure
- b. 500' above the surface
- c. 1,000' above the highest obstacle and within a horizontal radius of 2,000' of the aircraft
- d. 2,000' above the surface

29. How much fuel have you burned so far on this leg?

- a. 4.2 gallons
- b. 4.7 gallons
- c. 3.8 gallons
- d. 3.2 gallons

30. You look down at your sectional and notice a circle of thick dashed magenta lines to the east of PUB, what do those indicate?
- a. Class E Airspace
 - b. Area of National Security
 - c. Class G Route
 - d. TFRs relating to National Security
31. What is your magnetic heading during your descent?
- a. 338°
 - b. 330°
 - c. 320°
 - d. 325°
32. What is your ground speed during your descent?
- a. 106 KTS
 - b. 118 KTS
 - c. 120 KTS
 - d. 124 KTS
33. How much time did you spend in descent during leg 3?
- a. 6:55
 - b. 5:40
 - c. 5:23
 - d. 6:38
34. What lights are you required to have on for this flight and when?
- a. Landing light, anti-collision lights, navigation lights (after sunset)
 - b. Landing light, anti-collision lights, navigation lights (after evening civil twilight)
 - c. Anti-collision lights, navigation lights (after sunset)
 - d. Anti-collision lights, navigation lights (after evening civil twilight)
35. How much distance was covered in descent on leg 3?
- a. 15.6 NM
 - b. 9.5 NM
 - c. 11.7 NM
 - d. 13.2 NM
36. What was your landing distance over a 50' obstacle into KCOS?
- a. 2,130'
 - b. 2,367'
 - c. 1,258'
 - d. 1,132'
37. Colin calls and asks how much he owes you for his share of fuel cost. If fuel in KCOS cost \$4.70, how much can you ask him to pay?
- a. \$92.12
 - b. \$61.57
 - c. \$46.06
 - d. \$30.78

38. How much fuel do you need to add to fill the tanks?

- a. 15.7 gallons
- b. 39.5 gallons
- c. 32.3 gallons
- d. 18.7 gallons

39. What time do you land?

- a. 10:35 Local
- b. 17:10 Local
- c. 23:40 Zulu
- d. 23:05 Zulu

40. How much cross-country time can you log today?

- a. 0.5
- b. 0.6
- c. 1.2
- d. 1.6

General Aeronautical Knowledge

41. You plot a course directly East from N41°16'33" W94°3'52" to N41°16'33" W94°46'3". What is the distance between these two points?
- a. 23.1 NM
 - b. 27.2 NM
 - c. 31.7 NM
 - d. 42.2 NM
42. What is your angle of descent if you are descending at 1800'/minute at a TAS of 285 KTS? The wind is 240° at 76 KTS, and your true course is 043°.
- a. 1.9°
 - b. 2.3°
 - c. 2.9°
 - d. 3.6°
43. Your Cessna has 6" radius tires. If you touch down at 47 knots groundspeed, what RPM do the tires spin up to?
- a. 1320 RPM
 - b. 1510 RPM
 - c. 1680 RPM
 - d. 3030 RPM
44. You depart with full fuel (46 gallons), and fly a 448 NM flight at 127 knots groundspeed. If your aircraft burns 9.6 GPH and the fuel arm is 45.9", what is your landing CG? You took off at 2,180 LBS with a CG of 32.4".
- a. 28.1"
 - b. 31.0"
 - c. 31.4"
 - d. 33.5"
45. Your flight was 129 NM on a true course of 178°. You use your GPS to track directly to the destination and fly at 137 KTAS. If your MH is 169° in cruise and the flight takes 62 minutes, what are the winds aloft? Variation=5E.
- a. 030° at 12 KTS
 - b. 100° at 35 KTS
 - c. 140° at 15 KTS
 - d. 220° at 19 KTS
46. Referencing the previous question, if you applied brakes at 98 knots with 4,300' of runway remaining, and released the brakes 7 seconds later at 20 knots with 1,100' of runway remaining, what was your rate of deceleration?
- a. 6.6'/sec.2
 - b. 16.3'/sec.2
 - c. 18.7'/sec.2
 - d. 24.4'/sec.2

47. After performing a rejected takeoff at 98 knots, you want to know how hot your brakes are. Looking at the manufacturer testing data, you see that maximum braking at 120 knots will increase brake temperatures by 35°C per 10 knots of speed reduction. Additionally, they note that for every 10 knots of speed reduction, the rate of temperature increase is reduced by 6%. If you applied maximum braking until reaching 20 knots, what were your brake temperatures?

- a. 181.5°C
- b. 209.4°C
- c. 231.6°C
- d. 246.4°C

48. You just got your brand new all electric airplane and you want to try it out on a short cross country flight. Your flight is 63 NM on a true course of 216° , and winds aloft are 170° at 32 KTS. Your new airplane cruises at 93 KTAS while consuming 72 Amp-hours (Ah) of power per hour. If the aircraft is equipped with a 250-Ah battery, what is the minimum charge level for departure if you want to land with your legal VFR reserve of 30 minutes?

- a. 27%
- b. 34%
- c. 41%
- d. 46%

49. After flying 113 NM of your 186 NM flight, you check your position and see that you have drifted 3.5° left of course. If you continue on your current track, how far from your destination will you be when you arrive?

- a. 3.2 NM
- b. 6.6 NM
- c. 8.9 NM
- d. 10.9 NM

50. In the previous scenario, what heading correction should you make to fly directly to the destination?

- a. 3° right
- b. 5° right
- c. 9° right
- d. 12° right

51. You're the captain of a Boeing 777 preparing to fly from Hong Kong to Memphis, TN. Your planned fuel burn for this flight is 173,000 pounds of Jet-A. While the aircraft is being loaded, aircraft maintenance notifies you that they've had to remove 4 feet of a rubber seal from your flaps. Per the aircraft manual you're required to apply a 0.09% over burn for each foot of missing seal. At the same time, you get notification from the ramp crew that you will be carrying dry ice in both your forward and aft belly cargo compartments. Per the aircraft manual, carriage of dry ice requires a 0.4% over burn for each belly compartment in which the dry ice is located. How much additional fuel do you need to put on the aircraft, knowing that in Hong Kong, the fuel measurement is in liters? (Assume fuel weight of 6.7 pounds/gallon.)

- a. 1130 liters
- b. 166 liters
- c. 1660 liters
- d. 740 liters

52. Cruising from KEYW to MYNN (092° TC, 483 NM away) your ETP to your first overwater alternate is 50 NM from KEYW. From that point you know the course to your alternate of 07FA is 046°. Cruising at 185 KTAS with winds at 284° at 32 KTS, how far from 07FA is your equal time point?

- a. 50 NM
- b. 115 NM
- c. 65 NM
- d. 201 NM

53. From the previous question, what is your ground speed to 07FA?

- a. 177 MPH
- b. 230 MPH
- c. 248 MPH
- d. 200 MPH

54. You and your friend decide to go to Las Vegas for the weekend. You depart from Mesquite (70 NM away) on a course of 219° and 105 KTAS. If your friend wants to arrive at the same time as you (1548Z), and he is departing from St. George on a course of 223° and 98 NM, what time would he have to depart if he wants to cruise at 105 KTAS? (Wind is 265° at 23 KTS)

- a. 14:40:15
- b. 15:00:17
- c. 14:52:01
- d. 15:07:27

55. From the previous question, If your friend departs at the same time as you do, what TAS would he have to fly to land at the same time as you?

- a. 123 KTS
- b. 141 KTS
- c. 292 KTS
- d. 309 KTS

56. ATC tells you to descend at 2,300 feet per minute for crossing traffic. What would that be in meters per second?

- a. 26.1
- b. 261
- c. 11.7
- d. 114

57. You are departing out of Eagle, CO (6547') where the altimeter setting is 30.24" Hg and the temperature is 94°F. What is the density altitude?

- a. 15,646'
- b. 10,519'
- c. 10,134'
- d. 9749'

58. From the previous question, what is the altimeter setting in hectopascals?

- a. 1,024.1
- b. 768.1
- c. 14.85
- d. 101.65

59. Climbing out of Eagle, CO you are maintaining 82 KIAS and need to achieve 580'/NM. In calm winds, what climb rate do you need to maintain? (Outside air temperature is 94°F and altimeter setting is 30.24" Hg).
- a. 919 FPM
 - b. 791 FPM
 - c. 679 FPM
 - d. 489 FPM
60. After you landed from your flight, you figured out you burned 5,319 LBS of Jet A, how many kilograms is that?
- a. 782.205
 - b. 780.431
 - c. 2,417.72
 - d. 2,420.21
61. In cruise the Boeing 737 burns 2,916 LBS/HR per engine, the Challenger 300 burns 880 LBS/HR per engine. If both aircraft cruise at 0.80 Mach (-50°C). How much more efficient is the Challenger than the 737?
- a. 8.775 NM/LBS
 - b. 4.373 NM/LBS
 - c. 0.37 NM/LBS
 - d. 0.185 NM/LBS
62. You are flying an approach over some buildings that requires a steeper than normal glide path of 3.5°. The tower reports a 15-kt headwind and you note your groundspeed of 145 KTS. What is the required rate of descent to maintain the glide path?
- a. 371.0 FPM
 - b. 768.5 FPM
 - c. 803.8 FPM
 - d. 896.6 FPM
63. As the Concorde approaches land it must slow from its supersonic speed. If it is at FL400 how much lower will the airspeed indicator read after having slowed from 2.0 Mach to 0.85 Mach assuming IAS=CAS and the temperature is ISA?
- a. 647 KTS
 - b. 478 KTS
 - c. 319 KTS
 - d. 248 KTS
64. Under the same conditions as the previous question, how many miles would it travel per second at 2.0 Mach cruise with calm winds?
- a. 1.87 NM per second
 - b. 0.089 NM per second
 - c. 0.133 NM per second
 - d. 0.313 NM per second
65. At the airport you are flying over (elev. 1,265') the AWOS is reporting a temperature of 10°C and altimeter setting of 29.67" Hg. At your cruise altitude of 7,500' MSL the temperature is -10°C. What is your true altitude?
- a. 7,265'
 - b. 7,760'
 - c. 6,645'
 - d. 6,000'

66. Your fully loaded aircraft weights 2,160 LBS with a CG of 48". If you then load 35 US gallons of fuel at an average station of 36" what will the resultant aircraft CG be?

- a. 49.06"
- b. 47.89"
- c. 48.11"
- d. 46.94"

67. Referencing the previous question, if your front seat passenger (168 LBS at 34") then decides they want to sit in the back seat (62") what will your CG be after they have moved?

- a. 44.96"
- b. 48.96"
- c. 47.14"
- d. 51.04"

68. The MD-11 normally has a maximum takeoff weight of 630,500 pounds. This number has to be reduced by approximately 30,000 pounds for each 10 knots of crosswind when departing from an un-grooved, wet runway up to a maximum crosswind of 24 knots. You're planning a flight from Taipei, Taiwan to Anchorage, Alaska departing on runway 5R at Taipei and the winds are reported as 100° at 28 knots and the runways are soaked thanks to a recent rainstorm. The ramp agent at Taipei is asking for the maximum possible payload. If your basic operating weight (including flight crew) is 257,511 pounds and the fuel load necessary to operate the flight with required reserves, alternate, etc is 197,200 pounds, what will you tell the ramp agent is the maximum payload for today's flight? (Choose the closest figure.)

- a. 115,500 pounds
- b. 103,100 pounds
- c. 111,300 pounds
- d. None of the above, the crosswind component exceeds 24 knots

69. You start out by flying a 210° heading but realize you have drifted 5° right of your intended course. To correct you turn to a heading of 190° and hold a 2° right wind correction angle. If your planned true airspeed is 125 KTS, what are the winds aloft?

- a. 177°@18 KTS
- b. 196°@34 KTS
- c. 007°@18 KTS
- d. 016°@34 KTS

70. Using the answer from the previous question, you turn to the next leg of your flight with a course of 140°. How long do you expect it will take to fly this 25 NM leg?

- a. 10.6 minutes
- b. 13.6 minutes
- c. 11.8 minutes
- d. 14.5 minutes

71. In cruise at 3,500' MSL you are indicating 105 KTS where the indicated temperature is 30°C. If the local altimeter setting is 29.62" Hg, what is your true airspeed?

- a. 96 KTAS
- b. 102 KTAS
- c. 108 KTAS
- d. 115 KTAS

72. From the previous question, this is less performance than you were hoping for and makes you wonder, what is the density altitude?

- a. 4,800'
- b. 6,200'
- c. 7,100'
- d. 8,500'

73. You load your airplane for a short flight and find that your CG is 0.32" aft of the limit. You have filled all 4 seats as follows: The two front seats are occupied by 2 adults weighing 160 pounds each, at arm 44. The rear two seats are occupied by 2 adults weighing 180 pounds each, at arm 74. If your current gross weight is 2,844 pounds, which of the following choices will bring your CG to the aft limit of 66.5"?

- a. Switching 1 passenger from the front to the back
- b. Removing 25 pounds from the baggage area at station 23
- c. Adding 9.2 gallons of AVGAS at station 50
- d. Adding 5 pound to the baggage area at station 85

74. You wish to fly from KDYL to KUKT which is a distance of 22 nautical miles. How long will this flight take if your aircraft can maintain a groundspeed of 63 statute miles per hour?

- a. 20.87 minutes
- b. 22.02 minutes
- c. 23.31 minutes
- d. 24.11 minutes

75. You need to clear a ridge 8 nautical miles away that is 2,322 feet MSL at the summit. If you would like to clear the ridge by 500 feet, what minimum climb rate will you need if you expect an average groundspeed of 84 knots departing from an airport elevation of 1,103' MSL?

- a. 301 FPM
- b. 214 FPM
- c. 412 FPM
- d. 193 FPM

76. You wish to visit a friend for dinner. The flight will be 233 NM at a groundspeed of 94 KTS at 7.4 GPH fuel burn. How much fuel will you need to carry for this flight including day VFR reserves?

- a. 18.34 gallons
- b. 20.11 gallons
- c. 22.04 gallons
- d. 23.88 gallons

77. The fuel truck in Aruba dispenses Jet-A at the rate of 13.2 liters/second. If your dispatch requested fuel load is 34,900 pounds, and you currently have 8,430 pounds of fuel on board, how long will it take to pump the required fuel? Assume fuel density of 6.7 pounds/gallon.

- a. 1,133 minutes
- b. 18.88 minutes
- c. 24.89 minutes
- d. 1,494 minutes

78. At FL130 your aircraft burns 15,415 pounds/hour at 320 KIAS. At FL180 it burns 16,262 pounds/hour at 320 KIAS. Assuming a linear change and a fuel density of 6.77 pounds/gallon, how many gallons of JET-A will you burn at FL150 at 320 KIAS?

- a. 52.6 gallons/minute
- b. 38.8 gallons/minute
- c. 15677 gallons/hour
- d. 125 gallons/hour

79. While crossing radial 294 of a VOR you note the time is 14:42:32. You then cross radial 289 at 14:45:13. Flying at 300 mph, how far away is the VOR?

- a. 162 NM
- b. 16.2 NM
- c. 141 NM
- d. 14.1 NM

80. You're a newly minted FedEx B767 captain based in Hong Kong subject to higher weather minimums until obtaining 100 hours on the aircraft. To be a suitable alternate airport, the lowest reported values can be a 300-foot ceiling and 1 statute mile visibility. FedEx B767 aircraft are approved for land with up to a 15-kt tailwind, 15-kt crosswind and/or 25-kt headwind. Based on the following weather forecast and airport information, can Chengdu, China (Runway Configuration: 2L/20R and 2R/20L) be planned as an alternate for your upcoming flight?

Wind: 350° degrees at 13 meters/second

Visibility: 1500 meters

- a. Yes
- b. No