The FAA computer-assisted testing system is supported by a series of supplement publications. These publications, available through several aviation publishers, include the graphics, legends, and maps that are needed to successfully respond to certain test items. Use the following URL to download a complete list of associated supplement books: [http://www.faa.gov/pilots/testing/supplements/](http://www.faa.gov/pilots/testing/supplements/)

The Learning Statement Reference Guide for Airman Knowledge Testing contains listings of learning statements with their associated codes. It can be located at: [http://www.faa.gov/training_testing/testing/media/LearningStatementReferenceGuide.pdf](http://www.faa.gov/training_testing/testing/media/LearningStatementReferenceGuide.pdf)

1. **PLT132**
   COM
   The ratio of an airplane’s true airspeed to the speed of sound in the same atmospheric conditions is
   A) equivalent airspeed.
   B) transonic airflow.
   C) mach number.

2. **PLT310**
   COM
   A load factor of 1.2 means the total load on an aircraft’s structure is 1.2 times its
   A) gross weight.
   B) load limit.
   C) gust factor.

3. **PLT018**
   COM
   If the airspeed is decreased from 98 knots to 85 knots during a coordinated level 45° banked turn, the load factor will
   A) remain the same, but the radius of turn will decrease.
   B) decrease, and the rate of turn will decrease.
   C) remain the same, but the radius of turn will increase.

4. **PLT018**
   COM
   If the airspeed is increased from 89 knots to 98 knots during a coordinated level 45° banked turn, the load factor will
   A) decrease, and the radius of turn will decrease.
   B) remain the same, but the radius of turn will increase.
   C) increase, but the rate of turn will decrease.

5. **PLT168**
   COM
   During the transition from straight-and-level flight to a climb, the angle of attack is increased and lift
   A) is momentarily decreased.
   B) remains the same.
C) is momentarily increased.

6. PLT266 COM
Both lift and drag would be increased when which of these devices are extended?
A) Flaps.
B) Spoilers.
C) Slats.

7. PLT237 COM
As airspeed decreases in level flight below that speed for maximum lift/drag ratio, total drag of an airplane
A) decreases because of lower parasite drag.
B) increases because of increased induced drag.
C) increases because of increased parasite drag.

8. PLT242 COM
An aircraft airfoil is designed to produce lift resulting from a difference in the
A) negative air pressure below and a vacuum above the airfoil’s surface.
B) vacuum below the airfoil’s surface and greater air pressure above the airfoil’s surface.
C) higher air pressure below the airfoil’s surface and lower air pressure above the airfoil’s surface.

9. PLT242 COM
Why is it necessary to increase back elevator pressure to maintain altitude during a turn? To compensate for the
A) loss of the vertical component of lift.
B) loss of the horizontal component of lift and the increase in centrifugal force.
C) rudder deflection and slight opposite aileron throughout the turn.

10. PLT237 COM
In theory, if the airspeed of an aircraft is cut in half while in level flight, parasite drag will become
A) one-third as much.
B) one-half as much.
C) one-fourth as much.

11. PLT477 COM
The stalling speed of an airplane is most affected by
A) changes in air density.
B) variations in flight altitude.
C) variations in airplane loading.

12. PLT168 COM
To hold an airplane in level flight at airspeeds from very slow to very fast, a pilot must coordinate thrust and
A) angle of incidence.
B) gross weight.
C) angle of attack.

13. **PLT245**

A left side slip is used to counteract a crosswind drift during the final approach for landing. An over-the-top spin would most likely occur if the controls were used in which of the following ways? Holding the stick
A) too far back and applying full right rudder.
B) in the neutral position and applying full right rudder.
C) too far to the left and applying full left rudder.

14. **PLT004**

(Refer to figure 13.)

**GIVEN:**
- Aircraft weight: 4,000 lb
- Airport pressure altitude: 2,000 ft
- Temperature at 2,000 feet: 32 °C

Using a maximum rate of climb under the given conditions, how much time would be required to climb to a pressure altitude of 8,000 feet?
A) 7 minutes.
B) 8.4 minutes.
C) 11.2 minutes.

15. **PLT008**

(Refer to figure 35.)

**GIVEN:**
- Temperature: 85 °F
- Pressure altitude: 6,000 ft
- Weight: 2,800 lb
- Headwind: 14 kts

Determine the approximate ground roll.
A) 742 feet.
B) 1,280 feet.
C) 1,480 feet.

16. **PLT134**

The performance tables of an aircraft for takeoff and climb are based on
A) pressure/density altitude.
B) cabin altitude.
C) true altitude.

17. **PLT012**

(Refer to figure 11.) What would be the approximate true airspeed and fuel consumption per hour at an altitude of 7,500 feet, using 52 percent power?
A) 103 MPH TAS, 6.3 GPH.
B) 105 MPH TAS, 6.2 GPH.
C) 105 MPH TAS, 6.6 GPH.

18. PLT002 COM
(Refer to figure 2.) Select the correct statement regarding stall speeds.
A) Power-off stalls occur at higher airspeeds with the gear and flaps down.
B) In a 60° bank the airplane stalls at a lower airspeed with the gear up.
C) Power-on stalls occur at lower airspeeds in shallower banks.

19. PLT002 COM
What is the stall speed of an airplane under a load factor of 2.5 G`s if the unaccelerated stall speed is 60 knots? (Refer to figure 4. To use the chart, enter the figure from the far left vertical scale, Load Factor. Move horizontally right to the Load Factor curve. From that point, move vertically up to the intersection of the Stall Speed Increase curve. Next, move horizontally left to the vertical axis labeled Percent Increase in Stall Speed.)
A) 62 knots.
B) 84 knots.
C) 96 knots.

20. PLT015 COM
If an airplane is consuming 12.5 gallons of fuel per hour at a cruising altitude of 8,500 feet and the groundspeed is 145 knots, how much fuel is required to travel 435 NM?
A) 27 gallons.
B) 34 gallons.
C) 38 gallons.

21. PLT015 COM
If fuel consumption is 80 pounds per hour and groundspeed is 180 knots, how much fuel is required for an airplane to travel 460 NM?
A) 205 pounds.
B) 212 pounds.
C) 460 pounds.

22. PLT015 COM
If fuel consumption is 80 pounds per hour and groundspeed is 180 knots, how much fuel is required for an airplane to travel 477 NM?
A) 205 pounds.
B) 212 pounds.
C) 460 pounds.

23. PLT012 COM
If an aircraft is consuming 9.5 gallons of fuel per hour at a cruising altitude of 6,000 feet and the groundspeed is 135 knots, how much fuel is required to travel 420 NM?
A) 27 gallons.
B) 30 gallons.
C) 35 gallons.

24. PLT012 COM
If an aircraft is consuming 9.5 gallons of fuel per hour at a cruising altitude of 6,000 feet and the
groundspeed is 135 knots, how much fuel is required to travel 380 NM?
A) 27 gallons.
B) 30 gallons.
C) 35 gallons.

25. PLT012 COM
If an aircraft is consuming 9.3 gallons of fuel per hour at a cruising altitude of 6,000 feet and the
groundspeed is 135 knots, how much fuel is required to travel 390 NM?
A) 27 gallons.
B) 30 gallons.
C) 35 gallons.

26. PLT127 COM
Density altitude is the vertical distance above mean sea level in the standard atmosphere at which
A) pressure altitude is corrected for standard temperature.
B) a given atmospheric density is to be found.
C) temperature, pressure, altitude, and humidity are considered.

27. PLT074 COM
(Refer to figure 5.) The vertical line from point E to point F is represented on the airspeed indicator by the
A) upper limit of the yellow arc.
B) upper limit of the green arc.
C) blue radial line.

28. PLT343 COM
Frequent inspections should be made of aircraft exhaust manifold-type heating systems to minimize the possibility of
A) exhaust gases leaking into the cockpit.
B) a power loss due to back pressure in the exhaust system.
C) a cold-running engine due to the heat withdrawn by the heater.

29. PLT343 COM
An abnormally high engine oil temperature indication may be caused by
A) a defective bearing.
B) the oil level being too low.
C) operating with an excessively rich mixture.

30. PLT343 COM
For internal cooling, reciprocating aircraft engines are especially dependent on
A) a properly functioning cowl flap augmenter.
B) the circulation of lubricating oil.
C) the proper freon/compressor output ratio.

31. PLT444 COM
Who has the final authority to accept or decline any 'land and hold short' (LAHSO) clearance?
A) ATC approach controller.
B) ATC tower controller.
C) Pilot-in-command.

32. PLT140 COM
When should pilots decline a 'land and hold short' (LAHSO) clearance?
A) If runway surface is contaminated.
B) When it will compromise safety.
C) Only when the tower controller concurs.

33. PLT140 COM
Once a pilot-in-command accepts a 'land and hold short' (LAHSO) clearance, the clearance must be adhered to, just as any other ATC clearance, unless
A) an amended clearance is obtained or an emergency occurs.
B) the wind changes or Available Landing Distance decreases.
C) Available Landing Distance decreases or density altitude increases.

34. PLT140 COM
A 'land and hold short' (LAHSO) clearance
A) precludes a "Go Around" by ATC.
B) does not preclude a rejected landing.
C) requires a runway exit at the first taxiway.

35. PLT141 COM
This sign is a visual clue that
A) confirms the aircraft's location to be on taxiway "B."
B) warns the pilot of approaching taxiway "B."
C) indicates "B" holding area is ahead.

36. PLT141 COM
The 'yellow demarcation bar' marking indicates
A) runway with a displaced threshold that precedes the runway.
B) a hold line from a taxiway to a runway.
C) the beginning of available runway for landing on the approach side.

37. PLT141 COM
The runway holding position sign is located on
A) runways that intersect other runways.
B) taxiways protected from an aircraft approaching a runway.
C) runways that intersect other taxiways.

38. PLT141 COM
"Runway Holding Position Markings" on taxiways
A) identify where aircraft are prohibited to taxi when not cleared to proceed by ground control.
B) identify where aircraft are supposed to stop when not cleared to proceed onto the runway.
C) allow an aircraft permission onto the runway.

39. PLT141 COM
(Refer to figure 64.) If cleared for an intersection takeoff on runway 8, you see this sign at the intersection hold short position. Which way should you turn when taxiing onto the runway?
A) Left.
B) Right.
C) Need more information.

40. PLT141 COM
(Refer to figure 64.) You see this sign when holding short of the runway. You receive clearance to back taxi on the runway for a full-length runway 8 departure. Which way should you turn when first taxiing on to the runway for takeoff?
A) Left.
B) Right.
C) Need more information.

41. PLT141 COM
This taxiway sign would be expected
A) at the intersection of runway 04/22 departure end and the taxiway.
B) near the intersection of runways 04 and 22.
C) at a taxiway intersecting runway 04/22.

42. PLT141 COM
This taxiway sign would be expected
A) at the intersection of runway 04/22 departure end and the taxiway.
B) near the intersection of runways 04 and 22.
C) at a taxiway intersecting runway 04/22.

43. PLT141 COM
This sign confirms your position on
A) runway 22.
B) routing to runway 22.
C) taxiway 22.

44. PLT141 COM
From the cockpit, this marking confirms the aircraft to be
A) on a taxiway, about to enter runway zone.
B) on a runway, about to clear.

C) near an instrument approach clearance zone.

45. PLT141 COM
This signage and pavement markings confirms you are
A) at the approach end of runway 22.
B) about to enter a runway at the intersection of intersecting crossing runways.
C) about to leave the taxiway and enter the runway at an intersection.

46. PLT162 COM
Which is true regarding flight operations in Class A airspace?
A) May conduct operations under visual flight rules.
B) Aircraft must be equipped with approved distance measuring equipment (DME).
C) Aircraft must be equipped with an ATC transponder and altitude reporting equipment.

47. PLT161 COM
The radius of the uncharted Outer Area of Class C airspace is normally
A) 20 NM.
B) 30 NM.
C) 40 NM.

48. PLT040 COM
(Refer to figure 54.) What is the ceiling of the Class D Airspace of the Byron (C83) airport (Area 2)?
A) 2,900 feet.
B) 7,600 feet.
C) Class D Airspace does not exist at Byron (C83).

49. PLT526 COM
Who is responsible for filing a Near Midair Collision (NMAC) Report?
A) A passenger on board the involved aircraft.
B) Local law enforcement.
C) Pilot and/or Flight Crew of aircraft involved in the incident.

50. PLT526 COM
Pilots and/or Flight Crew members involved in NMAC occurrences are urged to report each incident immediately:
A) By cell phone to the nearest Flight Standards District Office (FSDO) as this is an emergency.
B) To local law enforcement.
C) By radio or telephone to the nearest FAA ATC Facility or FSS.

51. PLT208 COM
A pilot's most immediate and vital concern in the event of complete engine failure after becoming airborne on takeoff is
A) maintaining a safe airspeed.
B) landing directly into the wind.
C) turning back to the takeoff field.

52. PLT509 COM
Which procedure should you follow to avoid wake turbulence if a large jet crosses your course from left to right approximately 1 mile ahead and at your altitude?
A) Make sure you are slightly above the path of the jet.
B) Slow your airspeed to $V_A$ and maintain altitude and course.
C) Make sure you are slightly below the path of the jet and perpendicular to the course.

53. PLT509 COM
Which is true with respect to vortex circulation in the wake turbulence generated by an aircraft?
A) Helicopters generate downwash turbulence only, not vortex circulation.
B) The vortex strength is greatest when the generating aircraft is heavy, clean, and slow.
C) When vortex circulation sinks into ground effect, it tends to dissipate rapidly and offer little danger.

54. PLT022 COM
What are some of the hazardous attitudes dealt with in Aeronautical Decision Making (ADM)?
A) Risk management, stress management, and risk elements.
B) Poor decision making, situational awareness, and judgment.
C) Antiauthority (don't tell me), impulsivity (do something quickly without thinking), macho (I can do it).

55. PLT103 COM
Most pilots have fallen prey to dangerous tendencies or behavior problems at some time. Some of these dangerous tendencies or behavior patterns which must be identified and eliminated include:
A) Deficiencies in instrument skills and knowledge of aircraft systems or limitations.
B) Peer pressure, get-there-itis, loss of positional or situation awareness, and operating without adequate fuel reserves.
C) Performance deficiencies from human factors such as, fatigue, illness or emotional problems.

56. PLT022 COM
An early part of the Aeronautical Decision Making (ADM) process involves
A) taking a self-assessment hazardous attitude inventory test.
B) understanding the drive to have the 'right stuff.'
C) obtaining proper flight instruction and experience during training.

57. PLT103 COM
What is the first step in neutralizing a hazardous attitude in the ADM process?
A) Dealing with improper judgment.
B) Recognition of hazardous thoughts.
C) Recognition of invulnerability in the situation.

58. PLT103 COM
What should a pilot do when recognizing a thought as hazardous?
A) Label that thought as hazardous, then correct that thought by stating the corresponding learned antidote.
B) Avoid developing this hazardous thought.
C) Develop this hazardous thought and follow through with modified action.

59. PLT104 COM
While on an IFR flight, a pilot emerges from a cloud to find himself within 300 feet of a helicopter. Which of the following alternatives best illustrates the 'MACHO' reaction?
A) He is not too concerned; everything will be alright.
B) He flies a little closer, just to show him.
C) He quickly turns away and dives, to avoid collision.

60. PLT103 COM
Examples of classic behavioral traps that experienced pilots may fall into are: trying to
A) assume additional responsibilities and assert PIC authority.
B) promote situational awareness and then necessary changes in behavior.
C) complete a flight as planned, please passengers, meet schedules, and demonstrate the 'right stuff.'

61. PLT272 COM
What does good cockpit stress management begin with?
A) Knowing what causes stress.
B) Good life stress management.
C) Eliminating life and cockpit stress issues.

62. PLT205 COM
To rid itself of all the alcohol contained in one beer, the human body requires about
A) 1 hour.
B) 3 hours.
C) 4 hours.

63. PLT205 COM
To rid itself of all the alcohol contained in one mixed drink, the human body requires about
A) 1 hour.
B) 2 hours.
C) 3 hours.

64. PLT463 COM
With a blood alcohol level below .04 percent, a pilot cannot fly sooner than
A) 4 hours after drinking alcohol.
B) 12 hours after drinking alcohol.
C) 8 hours after drinking alcohol.

65. PLT083 COM
(Refer to figure 30.) What minimum navigation equipment is required to complete the VOR/DME-A
procedure?
A) One VOR receiver.
B) One VOR receiver and DME.
C) Two VOR receivers and DME.

66. PLT083.COM
(Refer to figure 30.) When approaching the VOR/DME-A, the symbol [2800] in the MSA circle represents a minimum safe sector altitude within 25 NM of
A) DEANI intersection.
B) White Cloud VORTAC.
C) Baldwin Municipal Airport.

67. PLT083.COM
(Refer to figure 27.) The symbol [9200] in the MSA circle of the ILS RWY 35R procedure at DEN represents a minimum safe sector altitude within 25 NM of
A) Denver VORTAC.
B) Dymon outer marker.
C) Cruup I-AQD DME fix.

68. PLT056.COM
(Refer to figure 17.) Which statement is true regarding illustration 2, if the present heading is maintained? The aircraft will
A) cross the 180 radial at a 45° angle outbound.
B) intercept the 225 radial at a 45° angle.
C) intercept the 360 radial at a 45° angle inbound.

69. PLT091.COM
(Refer to figure 16.) At the position indicated by instrument group 1, what would be the relative bearing if the aircraft were turned to a magnetic heading of 150°?
A) 150°.
B) 190°.
C) 250°.

70. PLT014.COM
(Refer to figure 21.) If the time flown between aircraft positions 2 and 3 is 13 minutes, what is the estimated time to the station?
A) 13 minutes.
B) 17 minutes.
C) 26 minutes.

71. PLT064.COM
(Refer to figure 55) En route on V448 from YKM VORTAC to BTG VORTAC, what minimum navigation equipment is required to identify ANGEO intersection?
A) One VOR receiver.
B) One VOR receiver and DME.
C) Two VOR receivers.

72. PLT466 COM
14 CFR part 1 defines $V_{NE}$ as
A) maximum landing gear extended speed.
B) never-exceed speed.
C) maximum nose wheel extend speed.

73. PLT395 COM
14 CFR part 1 defines $V_Y$ as
A) speed for best rate of descent.
B) speed for best angle of climb.
C) speed for best rate of climb.

74. PLT444 COM
In what type of operation, not regulated by 14 CFR part 119, may a commercial pilot act as pilot in command and receive compensation for services?
A) On-demand, nine or less passenger, charter flights.
B) Aerial application, and bird chasing.
C) On-demand cargo flights.

75. PLT444 COM
Which of the following preflight actions is the pilot in command required to take in order to comply with the United States Code of Federal Regulations regarding day Visual Flight Rules (VFR)?
A) File a VFR flight plan with a Flight Service Station.
B) Verify the airworthiness certificate is legible to passengers.
C) Verify approved position lights are not burned out.

76. PLT444 COM
You are taking a 196 nautical mile VFR cross country flight in mountainous terrain. Which of the following actions must the pilot in command take?
A) Verify the airworthiness certificate is legible to passengers.
B) File a VFR flight plan with a Flight Service Station.
C) Ensure all items in the baggage area are strapped down.

77. PLT444 COM
You are taking a 123 nautical mile VFR flight from one airport to another. Which of the following actions must the pilot in command take?
A) Ensure each passenger has a legible photo identification.
B) Verify the airworthiness certificate is legible to passengers.
C) File a VFR flight plan with a Flight Service Station.

78. PLT405 COM
Which is required equipment for powered aircraft during VFR night flights?
A) Anticollision light system.
79. PLT444
Before beginning any flight under IFR, the pilot in command must become familiar with all available information concerning that flight. In addition, the pilot must
A) be familiar with all instrument approaches at the destination airport.
B) list an alternate airport on the flight plan, and confirm adequate takeoff and landing performance at the destination airport.
C) be familiar with the runway lengths at airports of intended use, and the alternatives available, if the flight cannot be completed.

80. PLT414
During a night operation, the pilot of aircraft #1 sees only the green light of aircraft #2. If the aircraft are converging, which pilot has the right-of-way? The pilot of aircraft
A) #2, aircraft #2 is to the right of aircraft #1.
B) #1, aircraft #1 is to the right of aircraft #2.
C) #2, aircraft #2 is to the left of aircraft #1.

81. PLT288
The visibility entry in a Terminal Aerodrome Forecast (TAF) of P6SM implies that the prevailing visibility is expected to be greater than
A) 6 nautical miles.
B) 6 statute miles.
C) 6 kilometers.

82. PLT514
Aviation Area Forecasts (FAs) for the contiguous U.S. are used in conjunction with inflight aviation weather advisories to interpolate
A) temperatures and winds at altitude.
B) conditions at airports for which no TAFs are issued.
C) radar echo precipitation types and intensity levels.

83. PLT059
What is meant by the Special METAR weather observation for KBOI?
SPECI KBOI 091854Z 32005KT 11/2SM RA BR OVC007 17/16 A2990 RMK RAB12
A) Rain and fog are creating an overcast at 700 feet AGL; rain began at 1912Z.
B) The temperature-dew point spread is 1°C; rain began at 1812Z.
C) Rain and overcast at 1200 feet AGL.

84. PLT475
What wind conditions would you anticipate when squalls are reported at your destination?
A) Rapid variations in windspeed of 15 knots or more between peaks and lulls.
B) Peak gusts of at least 35 knots combined with a change in wind direction of 30° or more.
C) Sudden increases in windspeed of at least 16 knots to a sustained speed of 22 knots or more for at
least 1 minute.

85. PLT059 COM 
The station originating the following METAR observation has a field elevation of 5,000 feet MSL. If the sky cover is one continuous layer, what is the thickness of the cloud layer? (Top of overcast reported at 8,000 feet MSL.)
METAR KHOB 151250Z 17006KT 4SM OVC005 13/11 A2998
A) 2,500 feet.
B) 3,500 feet.
C) 4,000 feet.

86. PLT061 COM 
What significant cloud coverage is reported by this pilot report?
KMOB
UA/OV 15NW MOB 1340Z/SK 025 OVC 045/075 OVC 080/090 OVC
A) Three (3) separate overcast layers exist with bases at 2,500, 7,500 and 9,000 feet.
B) The top of the lower overcast is 2,500 feet; base and top of second overcast layer are 4,500 and 9,000 feet, respectively.
C) The base of the second overcast layer is 2,500 feet; top of second overcast layer is 7,500 feet; base of third layer is 9,000 feet.

87. PLT287 COM 
On a Surface Analysis Chart, the solid lines that depict sea level pressure patterns are called
A) isobars.
B) isogons.
C) millibars.

88. PLT287 COM 
Dashed lines on a Surface Analysis Chart, if depicted, indicate that the pressure gradient is
A) weak.
B) strong.
C) unstable.

89. PLT287 COM 
On Surface Analysis Charts, widely spaced isobars indicate a
A) weak pressure gradient.
B) strong pressure gradient.
C) relatively turbulent wind.

90. PLT495 COM 
Thunderstorms identified as severe or giving an intense radar echo should be avoided by what distance?
A) 5 miles.
B) At least 25 miles.
C) At least 20 miles.
91. PLT495 COM
The greatest threats to an aircraft operating in the vicinity of thunderstorms are:
A) thunder and heavy rain.
B) hail and turbulence.
C) precipitation static and low visibility.

92. PLT518 COM
Hazardous wind shear is commonly encountered
A) near warm or stationary frontal activity.
B) when the wind velocity is stronger than 35 knots.
C) in areas of temperature inversion and near thunderstorms.

93. PLT518 COM
The minimum vertical wind shear value critical for probable moderate or greater turbulence is
A) 4 knots per 1,000 feet.
B) 6 knots per 1,000 feet.
C) 8 knots per 1,000 feet.

94. PLT518 COM
During departure, under conditions of suspected low-level wind shear, a sudden decrease in headwind will cause
A) a loss in airspeed equal to the decrease in wind velocity.
B) a gain in airspeed equal to the decrease in wind velocity.
C) no change in airspeed, but groundspeed will decrease.

95. PLT492 COM
What is the standard temperature at 6,500 feet?
A) 15 °C.
B) 2 °C.
C) 38 °F.

96. PLT261 COM
Which statement is true concerning the hazards of hail?
A) Hail damage in horizontal flight is minimal due to the vertical movement of hail in the clouds.
B) Rain at the surface is a reliable indication of no hail aloft.
C) Hailstones may be encountered in clear air several miles from a thunderstorm.

97. PLT076 COM
The jet stream and associated clear air turbulence can sometimes be visually identified in flight by
A) dust or haze at flight level.
B) long streaks of cirrus clouds.
C) a constant outside air temperature.
98. **PLT021** **COM**

GIVEN:

<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>ARM</th>
<th>MOMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty weight</td>
<td>957</td>
<td>29.07</td>
</tr>
<tr>
<td>Pilot (fwd seat)</td>
<td>140</td>
<td>-45.30</td>
</tr>
<tr>
<td>Passenger (aft seat)</td>
<td>170</td>
<td>+1.60</td>
</tr>
<tr>
<td>Ballast</td>
<td>15</td>
<td>-45.30</td>
</tr>
<tr>
<td>TOTALS</td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>

The CG is located at station
A) -6.43.
B) +16.43.
C) +27.38.

99. **PLT242** **COM**

The unequal lift across the rotor disc that occurs in horizontal flight as a result of the difference in velocity of the air over the advancing half of the disc area and the air passing over the retreating half of the disc area is known as
A) coning.
B) disc loading.
C) dissymmetry of lift.

100. **PLT011** **COM**

(Refer to figure 41.)

GIVEN:

- Helicopter gross weight: 1,275 lb
- Ambient temperature: 9 °F

Determine the in ground effect hover ceiling.
A) 6,600 feet.
B) 7,900 feet.
C) 8,750 feet.

101. **PLT021** **COM**

(Refer to figure 41.)

GIVEN:

- Helicopter gross weight: 1,225 lb
- Ambient temperature: 77 °F

Determine the in-ground-effect hover ceiling.
A) 6,750 feet.
B) 7,250 feet.
C) 8,000 feet.

102. **PLT004** **COM**

(Refer to figure 44.)

GIVEN:
Ambient temperature: 60 °F
Pressure altitude: 2,000 ft

What is the rate of climb?
A) 705 ft/min.
B) 630 ft/min.
C) 755 ft/min.

103. PLT004 COM
(Refer to figure 44.)
GIVEN:
Ambient temperature: 40 °F
Pressure altitude: 1,000 ft

What is the rate of climb?
A) 810 ft/min.
B) 830 ft/min.
C) 860 ft/min.

104. PLT012 COM
If an aircraft is consuming 9.7 gallons of fuel per hour at a cruising altitude of 6,000 feet and the
groundspeed is 115 knots, how much fuel is required to travel 350 NM?
A) 27 gallons.
B) 30 gallons.
C) 35 gallons.

105. PLT470 COM
The primary purpose of the tail rotor system is to
A) assist in making coordinated turns.
B) maintain heading during forward flight.
C) counteract the torque effect of the main rotor.

106. PLT175 COM
Using left pedal to assist a left turn during an autorotative descent will probably cause the rotor RPM to
A) increase and the airspeed to decrease.
B) decrease and the aircraft nose to pitch down.
C) increase and the aircraft nose to pitch down.

107. PLT259 COM
Ground resonance is less likely to occur with helicopters that are not equipped with
A) rigid rotor systems.
B) fully articulated rotor systems.
C) semi-rigid rotor systems.

108. PLT341 COM
The addition of power in a settling with power situation produces an
A) increase in airspeed.
B) even greater rate of descent.
C) increase in cyclic control effectiveness.

109. PLT265 COM
Should a helicopter pilot ever be concerned about ground resonance during takeoff?
A) No; ground resonance occurs only during an autorotative touchdown.
B) Yes; although it is more likely to occur on landing, it can occur during takeoff.
C) Yes, but only during slope takeoffs.

110. PLT208 COM
Which statement is true about an autorotative descent?
A) Generally, only the cyclic control is used to make turns.
B) The pilot should use the collective pitch control to control the rate of descent.
C) The rotor RPM will tend to decrease if a tight turn is made with a heavily loaded helicopter.

111. PLT264 COM
Under which situation is accidental settling with power likely to occur?
A) A steep approach in which the airspeed is permitted to drop to nearly zero.
B) A shallow approach in which the airspeed is permitted to drop below 10 MPH.
C) Hovering in ground effect during calm wind, high-density altitude conditions.

112. PLT268 COM
A pilot is hovering during calm wind conditions. The greatest amount of engine power will be required when
A) ground effect exists.
B) making a left-pedal turn.
C) making a right-pedal turn.

113. PLT201 COM
Which is true concerning a running takeoff?
A) If a helicopter cannot be lifted vertically, a running takeoff should be made.
B) One advantage of a running takeoff is that the additional airspeed can be converted quickly to altitude.
C) A running takeoff may be possible when gross weight or density altitude prevents a sustained hover at normal hovering altitude.

114. PLT486 COM
Which flight technique is recommended for use during hot weather?
A) During takeoff, accelerate quickly into forward flight.
B) During takeoff, accelerate slowly into forward flight.
C) Use minimum allowable RPM and maximum allowable manifold pressure during all phases of flight.

115. PLT466 COM
14 CFR part 1 defines VNO as
A) maximum operating limit speed.
B) maximum structural cruising speed.
C) never-exceed speed.

116. PLT436 COM
When operating a U.S.-registered civil helicopter, which document is required by regulation to be available in the aircraft?

117. PLT161 COM
What transponder equipment is required for helicopter operations within Class B airspace? A transponder
A) with 4096 code and Mode C capability.
B) is required for helicopter operations when visibility is less than 3 miles.
C) with 4096 code capability is required except when operating at or below 1,000 feet AGL under the terms of a letter of agreement.

118. PLT005 COM
GIVEN:
Pressure altitude 12,000 feet
True air temperature +15 °F
From the conditions given, the approximate density altitude is
A) 11,900 feet.
B) 14,130 feet.
C) 18,150 feet.

119. PLT021 COM
GIVEN:
<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>LNG.</th>
<th>LNG.</th>
<th>LAT.</th>
<th>LAT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty weight</td>
<td>1700</td>
<td>116.1</td>
<td>?</td>
<td>+0.2</td>
</tr>
<tr>
<td>Fuel (75 gal at 6.8 ppg)</td>
<td>?</td>
<td>110.0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Oil</td>
<td>12</td>
<td>179.0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Pilot (right seat)</td>
<td>175</td>
<td>65.0</td>
<td>?</td>
<td>12.5</td>
</tr>
</tbody>
</table>
| Passenger (left seat) | 195  | 104.0| ?    | -13.3|?
| TOTALS          | ?    | ?    | ?    | ?    |
Determine the longitudinal and lateral CG respectively.
A) 109.35 inches and -.04 inches.
B) 110.43 inches and +.02 inches.
C) 110.83 inches and -.02 inches.