1.	The London Heathrow (EGLL) airport runway 09R/27L is 12,008 feet long and the runway 09L/27R is 12,799 feet long. What is the difference in length in meters?

	A.	260 meters
	B.	242 meters
	C.	271 meters
	D.	223 meters

2.	If there is a 55 gallon barrel 60% full with oil (Barrel A), and a 55 gallon barrel 80% full with AVGAS (Barrel B), which is heavier and what is the difference in weight between to the two barrels?

	A.	AVGAS by 8 lbs
	B.	Oil by 12 lbs
	C.	AVGAS by 17 lbs
	D.	Oil by 29 lbs

3.	Departing from KMMH (Mammoth Lakes, CA, elevation 7135 feet) on a summer day (83°F) with an atmospheric pressure of 29.92", what would the Density Altitude be?

	A.	6,300 ft
	B.	10,400 ft
	C.	9,600 ft
	D.	8,200 ft

4.	Referring to question 3, if you were to returned to a winter day (8°F) with an atmospheric pressure of 30.20", how much lower is the Density Altitude?

	A.	3,500 ft
	B.	6,500 ft
	C.	4,500 ft
	D.	5,500 ft

5.	After flying for 2 hours 37 minutes at a groundspeed of 190 knots, how far have you flown?

	A.	408 Nautical Miles
	B.	498 Nautical Miles
	C.	558 Nautical Miles
	D.	628 Nautical Miles

6.	While flying at a pressure altitude of 8500 feet, with a IAS of 220 km/hr, and an OAT of -1°C, what would your TAS be?

	A.	136 kts
	B.	177 kts
	C.	211 kts
	D.	252 kts

7.   (Referring to Question #6) With a forecasted winds aloft of 340° at 29 kts and on a true course   of 220°,
        what is your groundspeed?

        A.   148 kts
        B.   124 kts
        C.   141 kts
        D.   132 kts

8.   (Referring to Question #7) The distance to your destination is 173 NM. If the winds turn out to
        be 265° at 36 kts, how much longer your flight take?

        A.   11 minutes
        B.   18 minutes
        C.   27 minutes
        D.   35 minutes

9.   While climbing at 860 Ft/NM with a rate of climb of 2330 FPM, what is the groundspeed?

        A.   184 kts
        B.   135 kts
        C.   162 kts
        D.   222 kts

10.   Your loaded aircraft weighs 2900 pounds with a CG of 75 inches. Your maximum takeoff weight is 2800
        pounds and the aft limit of the CG envelope is 73 inches. You decide to remove a portion of the 250
        pounds of cargo at a station of 100 inches to bring the aircraft back into the allowable range. How much
        will you need to remove?

        A.   235 lbs
        B.   224 lbs
        C.   212 lbs
        D.   200 lbs

11.   There are two barrels (weighing the same), one filled with AVGAS and one filled with oil. If
        barrel one is filled with 20 US Gallons of AVGAS, how many liters of oil are in barrel two?

        A.   73.2
        B.   60.5
        C.   44.7
        D.   94.4

12.   Departing QRS airport, there is an obstacle 0.65 NM beyond the point of rotation. This obstacle
        is 212 feet tall and the pilot wishes to clear it by 50 feet. If the groundspeed will be 79 knots,
        what is the required rate of climb to clear the obstacle as desired?

        A.   306 FPM
        B.   399 FPM
        C.   468 FPM
        D.   531 FPM

13.   At a groundspeed of 283 km/hr, how many NM are covered in 8 minutes and 6 seconds?

        _____ Nautical Miles   (to the tenth of a nautical mile)

14.   A flight departs Los Angeles International (LAX) to Medford, OR (MFR), 448 NM apart. After
        flying 200 NM, this pilot discovers that the aircraft is 19.8 NM right of course. If the original heading is
        003°, what is the new heading to parallel your course?

        A.   357°
        B.   360°
        C.   003°
        D.   005°

15.   (Referring Question #14) If the pilot wishes to rejoin the original course in 50 NM, what is the
        new heading to rejoin the course?

        A.   020°
        B.   341°
        C.   333°
        D.   027°

16.   While flying on a true course of 328°, with winds aloft forecasted to be 300° at 28 kts, and a TAS
        of 158 kts, what is the groundspeed and true heading?

        A.   184 kts and 333°
        B.   132 kts and 323°
        C.   166 kts and 329°
        D.   145 kts and 331°

17.   If a pilot is on a true heading of 121°, with a groundspeed of 140 kts, and the winds aloft are
        330° at 40 kts, what is the true course? Additionally, what is the pilot's original true airspeed?

        A.   111° and 116 kts
        B.   128° and 110 kts
        C.   113° and 165 kts
        D.   126° and 170 kts

18.   There is a missing boat off shore (heading 268° out and 88° in) and an aircraft has a total 5
        hours and 30 minutes on board. The pilot is tasked with flying to a point 75 miles offshore to
        look for the missing boat and return with at least 45 minutes of fuel onboard. If the TAS is
        105 kts and the winds aloft are 240° at 21 kts, how much time can the pilot spend on station
        searching for the boat?

        A.   196 minutes
        B.   191 minutes
        C.   185 minutes
        D.   179 minutes

19.   (Referring to Question #18) As you are flying out to the search area, new information is relayed stating the boat is suspected of drifting an additional 10 miles offshore. Additionally, the actual winds aloft are discovered to be 210° at 39 kts, how much time are you now able to spend searching for the missing boat?

        A.   161 minutes
        B.   167 minutes
        C.   172 minutes
        D.   178 minutes

20.   Performing a maintenance flight, a pilot has to fly for 4 hours and 20 minutes in cruise flight. If the winds aloft are 240° at 19 kts, the true course out is 021°, and the TAS in cruise is 145 kts, what is the time to turn back and what is that distance out?

        A.   116 minutes and 309 NM
        B.   191 minutes and 412 NM
        C.   188 minutes and 536 NM
        D.   141 minutes and 433 NM

21.   If two airports A and B are 212 NM, what is this distance in statute miles and kilometers?

        A.   184 SM and 342 km
        B.   199 SM and 321 km
        C.   244 SM and 393 km
        D.   267 SM and 425 km

22.   Seattle's new runway (16R / 34L) is exactly 8500 feet long, how long is that in meters?

        A.   3350 meters
        B.   2790 meters
        C.   2590 meters
        D.   2160 meters

23.   Passing by the Manchester, NH airport (KMHT), a pilot wishes to check his/her groundspeed using the VOR. If the pilot is 54 NM from the VOR and it takes 4 minutes 24 seconds to travel between the 180° and 168° radials, what is the groundspeed?

        A.   98 kts
        B.   122 kts
        C.   197 kts
        D.   147 kts

24.   A 747-400 is checking in on a center frequency at 40,000 feet at Mach 0.77. If the 747 is in a standard atmosphere, what is their TAS?

        A.   554 kts
        B.   493 kts
        C.   434 kts
        D.   421 kts

25.   If the CG range of an aircraft is 81.2 to 89.2, with a weight of 2700 lbs, and the current CG is at 91.7, what is the minimum weight that needs to be moved from the aft cargo area (Station 120) to the forward cargo area (Station 25) to bring the aircraft within limits?

        A.   102.4 lbs
        B.   88.2 lbs
        C.   78.9 lbs
        D.   70.8 lbs

26.   It takes 1 hour and 23 minutes to travel 141 NM with a True Course of 125°, TAS of 110 kts, and True Heading of 121°. How long will it take to return to the original destination?

        _____ minutes

27.   An aircraft is loaded as such:

        Empty Weight   2300 lbs at 75.0"
        2 Forward Passengers (150 lbs each)   300 lbs at 70.0"
        2 Aft Passengers (170 lbs each)   340 lbs at 95.0"
        40 US Gallons of AVGAS   240 lbs at 80.0"
        50 lbs of cargo   50 lbs at 125.0"

        What is the weight and balance of this loaded aircraft?

        A.   3230 lbs at 77.8"
        B.   3230 lbs at 68.6"
        C.   3030 lbs at 82.9"
        D.   3180 lbs at 78.8"

28.   (Referring to Question #27) If an aft passenger (170 lbs) decides they do not want to go, how much and in what direction does the CG shift?

        A.   Shifts Forward by 0.95"
        B.   Shifts Back by 0.95"
        C.   Shifts Forward by 0.31"
        D.   Shifts Back by 0.31"

29.   After traveling 96 NM, the aircraft is 6.3 NM left of course. What is the total correction needed to return on course in 20 NM?

        A.   22.80°
        B.   18.85°
        C.   15.60°
        D.   13.05°

30. While flying nearing Knoxville, TN, you fly past the Volunteer VOR. After passing the Volunteer VOR (KVXV) radials 116° to 134° in 5.1 minutes, the pilot calculates a groundspeed of 133 kts. How far from the VOR did the aircraft pass?

    A.   40.4 NM
    B.   37.6 NM
    C.   33.5 NM
    D.   31.2 NM

31. An aircraft (Empty Weight and CG of 1950 lbs at 65.0") has a CG limit between 67.5" and 73.0" and a maximum takeoff weight of 2850 lbs. The pilot (170 lbs), Tom (180 lbs), Samantha (120 lbs), and Laura (110 lbs) are flying to Orlando with 50 US Gallons of AVGAS (at 80.0"). The pilot and Samantha are up front (at 55.0") and Tom and Laura are in back (at 90.0"). Can all the passengers go to Orlando within legal limits?

    A.   Yes, by only 20 lbs and just barely inside the CG limit
    B.   Yes, by 120 lbs and well with CG limit
    C.   No, over weight by 80 lbs
    D.   No, outside of the CG envelope

32. At a pressure altitude of 24,000 feet with an OAT of -14°C and a calibrated altitude of 24,000 feet, what is the true altitude?

    A.   22,500 ft
    B.   22,000 ft
    C.   26,800 ft
    D.   25,800 ft

33. At takeoff from an airport (8820 ft MSL), with an altimeter of 29.63", and a temperature of 91°F, what is the true altitude?

    A.   9310 ft
    B.   9890 ft
    C.   8880 ft
    D.   7840 ft

34. (Referring to Question #33) If the IAS is 470 km/hr, what is the TAS and Mach value?

    A.   311 kts and Mach 0.455
    B.   576 kts and Mach 0.840
    C.   422 kts and Mach 0.620
    D.   470 kts and Mach 0.695

35. At roughly 6000 inches, the Airbus 380 is how many statute miles and how meters long?

    A.   0.210 statute miles and 338.0 meters
    B.   0.172 statute miles and 273.1 meters
    C.   0.120 statute miles and 193.2 meters
    D.   0.094 statute miles and 152.4 meters

36. A pilot is departing Ketchikan, AK (30 feet above sea level) on a true course of 196°, where the altimeter setting is 29.92". There is a hill 6.2NM away that is 2607 feet above field elevation. If the winds aloft are 230° at 41 kts, and OAT of +30°C, and the indicated airspeed is 120 kts in the climb, what rate of climb is required to clear the obstacle by at least 100 feet?

    A.   500 FPM
    B.   550 FPM
    C.   600 FPM
    D.   650 FPM

37. Flying at an indicated altitude of 9500 feet, the OAT is -12°C with an altimeter setting of 30.13". What is the true altitude?

    A.   9810 ft
    B.   9670 ft
    C.   9330 ft
    D.   9190 ft

38. On a flight between two airports 200 NM apart and on a heading of 120°, there is a ridgeline exactly halfway between the two airports, which is perpendicular to the course. The pilot wishes to deviate to the left at a 45° angle, to intercept the ridgeline. The pilot wishes to deviate 13.3 NM before the ridgeline. Assuming no wind. If the pilot then wishes to re-intercept the course 50 NM immediately after the ridgeline, what is the new heading to intercept the original course?

    A.   123°
    B.   126°
    C.   129°
    D.   132°

39. 195 kg of oil are equal to how many pounds of AVGAS?

    _____ pounds of AVGAS   (whole number of pounds)