1. You fly for 87 minutes at a speed of 159 mph and find yourself 9 nm off course. If you have another 133 nm to go, what is your correction to parallel?

   A: 2.3 degrees
   B: 2.7 degrees
   C: 4.0 degrees
   D: 4.7 degrees

2. In the above question, what is the total correction to your destination?

   A: 3.2 degrees
   B: 4.7 degrees
   C: 6.8 degrees
   D: 7.7 degrees

Given: Winds aloft: 203° @ 23 knots   WCA: 10° R
        TAS : 121 knots   MH: 135°
        Variation: 7° W   Distance flown: 211 sm
        Fuel flow: 8.4 gph   Deviation: -4°

3. How much gas was used for this flight?

   A: 12.4 US gal
   B: 12.9 US gal
   C: 13.3 US gal
   D: 13.9 US gal

4. An airplane descends from 9500 feet to 2800 feet at a rate of 830 fpm. It traveled 34.7 sm during the descent. What was its ground speed?

   A: 415 kph
   B: 423 kph
   C: 429 kph
   D: 434 kph

5. You fly 1 hour and 53 minutes covering 319 sm with a TAS of 151 knots If your TC is 256 degrees and your TH is 247 degrees, what is the wind speed aloft?

   A: 17 mph
   B: 18 knots
   C: 21 mph
   D: 24 knots

6. You are cruising at 13,500 feet AGL. If the local field temperature is 3 degrees C and assuming a standard lapse rate, what is the temperature at your altitude?

   A: -8 degrees F
   B: -11 degrees F
   C: -11 degrees C
   D: -13 degrees C

7. Surface winds from the last METAR were reported to be 350 degrees @ 23 knots You plan to takeoff runway 5. If the variation at the field is 16 degrees east, what is your crosswind component?

   A: 20 knots left
   B: 19 knots left
   C: 16 knots right
   D: 23 knots right

8. You have loaded your aircraft to weigh 3319 lbs. The problem is that your CG of 68.7 inches is 1.1 inches forward of the limit. How many pounds need to be moved from the current CG to station 110.3 to bring you back within limits?

   A: 75 lbs.
   B: 81 lbs.
   C: 88 lbs.
   D: 93 lbs.

Winds aloft forecast: 3000   6000
                         2014   2620
   TAS 137 mph; TC 165°; Deviation +3°; Cruise alt. 3500'; MH 179°

9. What would the variation be?

   A: 6 degrees W
   B: 9 degrees E
   C: 9 degrees W
   D: 6 degrees E

Given:
   Winds 168° @ 36 knots, Altimeter setting 30.18", Cruise alt. 6500', TC 246°,   IAS 162 mph, OAT 61°F

10. What is your TAS?

   A: 152 knots
   B: 158 knots
   C: 170 knots
   D: 181 knots

11. You climb at 97 mph. Your Airport Facility Directory indicates that there is a 91 meter obstacle off the end of the runway and you've calculated it to be 1.1 nm from your point of rotation. What climb rate will be required to clear this obstacle by 50'?

   A: 380 fpm
   B: 442 fpm
   C: 511 fpm
   D: 527 fpm

Given: Winds = 245° @ 22 Knots   Useable fuel = 74 gals.
        TAS = 119 mph   Fuel flow = 74 lbs./hr   TC out = 079°

12. How far out can you go under the above circumstances and still make it back with VFR day reserves?

   A: 317 nm
   B: 302 nm
   C: 293 nm
   D: 272 nm

13. How much does 36 quarts of oil weigh?

   A: 54.0 lbs.
   B: 67.5 lbs.
   C: 135 lbs.
   D: 141 lbs.

14. How much does 54.4 gallons of fuel weigh?

    A: 288.0 lbs.
    B: 302.7 lbs.
    C: 326.4 lbs.
    D: 408.0 lbs.

15. Your true course is 097 degrees. The winds aloft at your altitude are 360/26knots and you have a true airspeed of 102 knots If you have a ground speed of 109 mph, how long will it take you to travel 176 kilometers?

    A: 43 minutes
    B: 60 minutes
    C: 72 minutes
    D: 79 minutes

16. What is the density altitude if the field elevation is 3,543' and the OAT is 72 degrees F? The altimeter setting is 29.92" Hg.

    A: 4,100'
    B: 4,700'
    C: 5,000'
    D: 6,100'

17. If you burned 92.1 Imperial gallons of fuel on a 6 hour and 32 min flight, what was your burn rate in U.S. gallons?

    A: 14.2 gal
    B: 15.8 gal
    C: 17.1 gal
    D: 18.0 gal

18. Your TAS is 348 knots at 23,000' in a standard atmosphere. What is the Mach number?

    A: 0.57 Mach
    B: 0.51 Mach
    C: 0.24 Mach
    D: 0.20 Mach

19. If you cover 90 nm in 70 minutes, what rate of climb do you need to maintain 427 feet per nautical mile climb gradient?

    A: 332 fpm
    B: 375 fpm
    C: 435 fpm
    D: 550 fpm

20. Your altitude is 17,500' with a temperature of -15 C. What TAS will give you 199 mph IAS?

    A: 262 knots
    B: 228 knots
    C: 201 knots
    D: 185 knots

21. TC = 096, GS = 137 knots, TH = 101, TAS = 121 knots   Find: Wind correction angle, wind direction, and wind velocity.

    A: 5L, 320, 20 knots
    B: 5R, 246, 21 knots
    C: 5R, 235, 18 knots
    D: 5R, 221, 29 knots

22. TC = 193 degrees, GS = 265 kph, Wind = 080 degrees at 34 mph.   Find true heading and TAS.

    A: 182 TH, 136 knots
    B: 176 TH, 133 knots
    C: 202 TH, 140 knots
    D: 212 TH, 139 knots

23. When Charles Lindberg crossed the Atlantic Ocean in 1927, he flew for 33.5 hours and traveled 3610 statute miles. What was his average speed?

    A: 94 knots
    B: 96 knots
    C: 105 knots
    D: 107 knots

24. At one point while skimming just 50 feet over the icy seas, his TAS was 110 miles per hour. His GPS indicated a ground speed of 85 knots, and a track of 092 degrees. His state of the art induction compass indicated a heading of 086 degrees. What were the winds?

    A: 227 degrees at 10 miles per hour
    B: 040 degrees at 27 knots
    C: 067 degrees at 26 kilometers per hour
    D: 047 degrees at 14 knots

25. He carried 451 gallons of fuel, and landed with 85 gallons. What was his average fuel burn?

    A: 66 pounds per hour
    B: 12 pounds per hour
    C: 1.81 gallons per minute
    D: 78 pounds per hour

26. When he landed in France, 100,000 eager spectators flocked to his airplane. Each was intent on taking a souvenir swatch of the fabric covering. If there were 964 square feet of fabric on the airplane, and each spectator took one piece of fabric that was two square inches in size, how many spectators went home empty handed?

    A: None, there were plenty of swatches left
    B: 69408
    C: 38816
    D: 30592

27. Upon retirement, the *Spirit of St. Louis* had 489 hours 28 minutes of flight time spanning 174 flights. If the average ground speed for the life of the airplane was 85 miles per hour, what was the average distance per flight?

    A: 198 statute miles
    B: 208 nautical miles
    C: 239 nautical miles
    D: 300 kilometers

28. A few years later in 1938, a fellow named Howard decided to show off his fast airplane and flew around the world. His first leg was from Floyd Bennett airport in New York, NY to the same airport in Paris where Lindberg landed. This leg covered 3641 statute miles in a mere 16 hours and 38 minutes. What was his average ground speed?

    A: 300 miles per hour
    B: 359 knots
    C: 190 knots
    D: 550 kilometers per hour

29. Fast-forward to 1977 when the crew of an Air France Concorde flew the inaugural trip between New York and Paris. Those smart alecks were really putting old Lindy to shame by cruising at Mach 2.02. If they flew 3650 statute miles in 3 hours 35 minutes and burned 46 pounds per mile, what was the fuel burn rate?

    A: 28622 pounds per hour
    B: 44983 pounds per hour
    C: 46856 pounds per hour
    D: 52526 pounds per hour

30. Assuming a jet fuel weight of 6.8 pounds per gallon and an aircraft capacity of 98 passengers, what is the fuel economy in the previous question?

    A: 0.8 seat miles per gallon
    B: 4.2 seat miles per gallon
    C: 4.8 seat miles per gallon
    D: 14.4 seat miles per gallon

31. Referring back to the Lindberg questions, and realizing that the *Spirit of St. Louis* only has one seat, what was the fuel economy in miles per gallon of Lindberg's flight?

    A: 5.4 seat miles per gallon
    B: 9.9 seat miles per gallon
    C: 66.2 seat miles per gallon
    D: 97.8 seat miles per gallon

32. The approved CG range for your aircraft is from 22.5% Mean Aerodynamic Chord (MAC) to 34.0% MAC. If the leading edge of MAC is located at station 100" (equivalent to 0% MAC) and the trailing edge is located at station 140" (100% MAC), what station is the leading edge of the approved MAC envelope?

    A: 109"
    B: 113"
    C: 118"
    D: 122"

33. Referencing the previous question, you have completed all your weight and balance paperwork and determine that your CG is at 22.0% MAC. How much weight do you have to move from the front baggage area at station 85" to the aft baggage area at station 210" to move the CG to the forward limit? Your aircraft weighs 8,400 pounds.

    A: 0.134 pounds
    B: 1.34 pounds
    C: 13.4 pounds
    D: 134 pounds

34. You are cruising at a TAS of 83 knots. You fly a heading of 301° for 8 minutes and notice a drift of 4° right. You then fly a heading of 045° for 6 minutes and drift 5° left. What are the winds aloft?

    A: 349° at 14 knots
    B: 163° at 9 knots
    C: 266° at 18 knots
    D: 102° at 11 knots

35. After flying for 1 hour 22 minutes, you realize you have drifted 4 miles off course. If your groundspeed was 133 knots, how many degrees must you turn to arrive directly over your destination which is only 25 minutes away?

    A: 1.3°
    B: 2.9°
    C: 4.1°
    D: 5.7°

36. You are cruising at a blistering 73 knots groundspeed in your C150. How long will it take to fly 2 nautical miles?

    A: 1.6 minutes
    B: 1 minute 38 seconds
    C: 1.5 minutes
    D: 1 minute 32 seconds

37. It is a rather cool day in Phoenix, only 36° C. If the altimeter is 29.86" and the field elevation is 1,135 MSL, what is your density altitude?

    A: 3,050 feet
    B: 5,100 feet
    C: 3,950 feet
    D: 4,500 feet

38. Assuming a standard atmosphere, what is the speed of sound at 35,000 feet?

    A: 1,730 knots
    B: 556 knots
    C: 592 knots
    D: 576 knots

39. You have a TAS of 122 knots. The wind is 140° true at 28 knots and your TC is 311°. What is your compass heading if the variation is 14°W and the compass deviation is 2° east?

    A: 324 degrees
    B: 301 degrees
    C: 309 degrees
    D: 321 degrees

40. If you are climbing at 550 feet per minute, what is your climb gradient if your groundspeed is 84 knots?

    A: 394 ft/sm
    B: 342 ft/nm
    C: 342 ft/km
    D: 394 ft/nm