

- 1) Total Weight 7450 lbs
 CG location 81.5
 Aft CG limit 79.8

How much weight must be shifted from station 150 to station 31 to move the CG to exactly the aft CG limit?

- A. 72.8 lbs
- B. 96.1 lbs
- C. 84.4 lbs
- D. 106.4 lbs

- 2) Aircraft Weight 6000 lbs
 CG location 79.4

What is the location of the CG if 78 lbs were removed from station 135?

- A. 80.2
- B. 77.8
- C. 78.7
- D. 79.6

3) You travel 5 nm in 2 minutes 13 seconds. Your TAS is 140 kts. Your ground track is 342° and your desired TC was 350°. Your MH is 346° with a 7 E variation. What's the wind direction (True) and wind speed?

- A. 061°@32 kts
- B. 067°@27 kts
- C. 074°@23 kts
- D. 079°@25 kts

4) Your TAS is 134 kts. TC out is 354° and wind is 116°@25 kts. How long can you fly before turning back with 3 hours and 55 minutes of fuel on board?

- A. 1 hour 8 minutes
- B. 1 hour 45 minutes
- C. 2 hours 8 minutes
- D. 1 hour 31 minutes

5) Referring to the above question, how far can you fly before turning back?

- A. 294 sm
- B. 208 sm
- C. 303 sm
- D. 255 sm

6) 2.97 nm equals how many meters?

- A. 5500
- B. 4810
- C. 6050
- D. 5790

7) 1722 lbs of oil equals how many 55 gallon barrels?

- A. 5.2
- B. 4.7
- C. 2.3
- D. 4.2

8) 231 liters equals how many Imperial Gallons?

- A. 60.1
- B. 50.8
- C. 105.7
- D. 55.7

9) 227 kilograms equals how many gallons of fuel?

- A. 79.1
- B. 91.0
- C. 83.4
- D. 88.3

10) 210 divided by 50.5 equals

- A. 4.21
- B. 4.07
- C. 4.29
- D. 4.16

11) 84 times 17 equals

- A. 1408
- B. 1448
- C. 1428
- D. 1438

12) The temperature at your point of departure is 43° F and the pressure altitude is 4500 ft. What is the Density Altitude?

- A. 4490'
- B. 4710'
- C. 4160'
- D. 4305'

13) Four hundredths of an hour is how many seconds? _____ (whole number only)

14) A trip is 457 nm long and you're traveling at 187 kts. How long will it take?

- A. 2 hours 44 minutes
- B. 2 hours 26 minutes
- C. 1 hour 44 minutes
- D. 2 hours 11 minutes

15) You have been flying for 2 hours and 57 minutes at a ground speed of 169 kts. How far have you flown?

- A. 498 sm
- B. 487 sm
- C. 573 sm
- D. 534 sm

16) Your aircraft burns 61.4 pph. With 43 gallons on board, how many hours can you fly?

- A. 4 hours 27 minutes
- B. 3 hours 57 minutes
- C. 4 hours 13 minutes
- D. 4 hours 19 minutes

17) If an aircraft burns 4.2 gallons in 28 minutes, how much will it burn per hour?

- A. 8.8 gph
- B. 8.1 gph
- C. 9.0 gph
- d. 9.3 gph

18) If an aircraft departs an airport with an elevation of 715 feet and climbs to 5500 feet with an average rate of climb of 515 fpm, how long will it take to climb?

- A. 9 minutes 02 seconds
- B. 9 minutes 17 seconds
- C. 9 minutes 23 seconds
- D. 9 minutes 29 seconds

19) What IAS is needed to give a TAS of 152 mph with a Pressure Altitude of 6000 feet and an outside temperature of 26° C?

- A. 135 kts
- B. 172 kts
- C. 149 kts
- D. 117 kts

20) To maintain a climb rate of 335 feet per nm with a groundspeed of 123 mph, what is the minimum climb rate needed in feet per minute?

- A. 597 fpm
- B. 625 fpm
- C. 581 fpm
- D. 687 fpm

21) You notice you have been flying 44 minutes now with a groundspeed of 117 kts and you are 13 nm off course. With 49 nm to your destination, what is the total correction needed to converge with you course at your destination?

- A. 9.0°
- B. 25.0°
- C. 9.7°
- D. 15.9°

22) Aircraft Weight 4160 lbs
 Current CG 75.2

What would be the location of the new CG if 140 lbs were moved from station 62 to station 105?

- A. 73.7
- B. 74.9
- C. 77.9
- D. 76.7

23) Current aircraft weight 2945 lbs
 Current CG located at 76.7

What is the new location of the CG if 197 lbs were removed from station 119?

- A. 72.8
- B. 75.2
- C. 73.7
- D. 79.6

24) You're flying a TH of 164° with a TAS of 98 kts all the while maintaining a TC of 168° and a GS of 67 kts. What is the wind speed?

- A. 24 mph
- B. 37 mph
- C. 42 mph
- D. 32 mph

25) An aircraft burns 4.9 gallons in 17 minutes and 22 seconds. How much will it burn in 2 hours and 37 minutes?

- A. 44.2 gal
- B. 42.8 gal
- C. 39.9 gal
- D. 47.3 gal

26) A vertical updraft of 8000 fpm is now many kts? _____ (whole number only)

Use the following to answer questions 27 - 31.

You're departing Hometown airport (elevation 2280') with a 400 fpm rate of climb to a cruise altitude of 6500 feet. Your groundspeed in the climb is 85 kts and in cruise it is 120 kts. You descend to 1000 feet above destination airport (elevation 1700) with a groundspeed of 140 kts and a descent rate of 650 fpm. Your fuel consumption is 11 gph in climb, 9.5 gph in cruise and 7 gph in descent. You are carrying 27 gallons of usable fuel. The total distance of the flight is 295 nm.

27) Assuming a straight out departure and straight in landing, the total time of the trip is:

- A. 2:21:47
- B. 2:42:17
- C. 2:37:32
- D. 2:29:39

28) The total fuel consumed is

- A. 21.9 US Gal
- B. 24.9 US Gal
- C. 23.7 US Gal
- D. 26.2 US Gal

29) The miles of flight during cruise will be

- A. 295.0 nm
- B. 277.7 nm
- C. 266.5 nm
- D. 249.6 nm

30) The total elapsed time from the beginning of cruise to the end of descent is

- A. 2:19:06
- B. 2:22:06
- C. 2:29:30
- D. 2:11:06

31) Would you be able to make this flight and still have a 30 minute reserve?

- A. Yes
- B. No

32) Field elevation is 8430 feet and the altimeter setting is 30.55". If the temperature is 13° degrees F, what is the density altitude?

- A. 8000'
- B. 7400'
- C. 6100'
- D. 6900'

33) TC = 234° TAS = 111 kts TH = 230° GS = 82 mph
What is the crosswind?

- A. 9 kts L
- B. 4 kts L
- C. 13 kts L
- D. 9 kts R

34) You find that in order to maintain the 3.4° VASI, it takes -840 fpm at a groundspeed of what?

- A. 151 mph
- B. 159 mph
- C. 165 mph
- D. 171 mph

35) Your aircraft has a roll rate of 37° per second. If you start at wings level and begin your roll to the right, what would be your bank angle after 51 seconds?

- A. 52° to the right
- B. 86° to the right
- C. 172° to the left
- D. 121° to the right

36) A groundspeed check shows that we're covering .28 sm every 13 seconds. We've traveled 258 nm. What is our GS?

- A. 166 kts
- B. 149 kts
- C. 78 kts
- D. 67 kts

37) You're 42 lbs over gross weight with a CG of 103.4". To bring the aircraft within limits, we decide to remove the weight from station 155 which moves the CG forward .6". What is the new aircraft weight?

- A. 3654 lbs
- B. 3699 lbs
- C. 3541 lbs
- D. 3612 lbs

38) Flying at 13,500' PA and with an OAT of -17° C, what IAS is needed to give a TAS of 173 mph?

- A. 213 mph
- B. 167 mph
- C. 141 mph
- D. 133 mph

39) Mach .45 at 17,000' requires what IAS in knots? Standard atmosphere. _____(whole number only)