

1. What is the equivalent distance of 700 statute miles in nautical miles?
 - a. 608
 - b. 810
 - c. 722
 - d. 934

2. At a ground speed of 184 knots, what will be the time required to cover 288 nautical miles?
 - a. 86 minutes
 - b. 90 minutes
 - c. 94 minutes
 - d. 98 minutes

While preparing to take a load of cargo to a remote backcountry airstrip in the desert, you observe two steel 55-gallon drums. The freight forwarder has told you that one is completely filled with oil and that one is completely filled with AVGAS, but he can't remember which one is which. The following questions are based on this situation:

3. Your destination has ordered fuel only. In an attempt to determine which drum should go, you decide to use a scale. The first drum that you try weighs 355 pounds, so you decide:
 - a. that your manual flight computer has dead batteries
 - b. to take the first drum that you weighed, since you believe that it is fuel
 - c. that the first barrel could not possibly be fuel
 - d. that the scale has an error of 85 pounds

4. Just now you have noticed that there is a label on the second drum that is so faded that you can barely read it. You can make out that it says "Gross Weight 198 kg." How much does the empty drum weigh?
 - a. 25 pounds
 - b. 50 pounds
 - c. 75 pounds
 - d. 100 pounds

5. The floor in your cargo area is only approved for a load of 50 pounds per square foot. If you put the drum on a 25-pound pallet that is 36" square, will you even be able to take a 55-gallon drum of fuel?
 - a. Yes, and there is a 5% safety margin.
 - b. Yes, and you have 8 pounds per square foot to spare.
 - c. No, you cannot take the fuel because the floor load is exceeded
 - d. No, and the floor load limit is exceeded by 16 pounds per square foot.

6. If you fly at 107 knots for 107 minutes, how far will you have travelled?
 - a. 19 statute miles
 - b. 120 statute miles
 - c. 190 statute miles
 - d. 220 statute miles

Two aircraft are both on final for the same runway at a busy, tower-controlled airport. The controller knows that the first aircraft will fly 144 mph after crossing a point 7 nautical miles from the end of the runway. The second aircraft is behind the first, also on a final approach. Use this information to answer the following questions:

7. If the winds are calm, how long will it take the first aircraft to travel the last 5 statute miles of the approach?
 - a. 1 minute and 8 seconds
 - b. 1 minute and 12 seconds
 - c. 1 minute and 43 seconds
 - d. 2 minutes and 4 seconds

8. The controller needs to assure that as the first aircraft arrives at the runway, the second aircraft is 5 statute miles behind so that he can make room for a departure. If the second aircraft is assigned a final approach speed of 150 knots when he is 6.5 statute miles behind the first aircraft and 12.5 statute miles from the airport, will he have adequate spacing to meet the 5-statute mile criteria?
- No, the first aircraft will reach the runway with only 2 statute miles of spacing
 - No, the second aircraft would need to fly 300 km per hour to ensure spacing
 - Yes, the first aircraft will land 6.2 statute miles ahead of the second.
 - Yes, the first aircraft will land 5.3 statute miles ahead of the second.
9. Perhaps the pilot of the first aircraft has a rusty instrument scan, and actually flies 10 mph slower than his assigned speed. If the wind picks up to a 5-knot headwind component, what will his ground speed be on final?
- 127 knots
 - 128 mph
 - 154 knots
 - 167 mph
10. If the Density Altitude is 8000 feet and the temperature is 10 degrees C, what is the pressure altitude?
- 8900 feet
 - 7900 feet
 - 6900 feet
 - 6000 feet
11. While on an exotic international trip you realize that your fuel order must be placed in liters. Since you need 58 gallons, you request how many liters?
- 252
 - 234
 - 228
 - 219
12. If the OAT is 20 degrees C, the Pressure Altitude is 8000 feet, and the Calibrated Altitude is 8500 feet, what is the True Altitude?
- 9100 feet
 - 9350 feet
 - 9600 feet
 - Not enough information given
13. While in a steady climb late at night, you discover a need to know your climb rate. Unfortunately, inky shadows have obscured your VSI. Undeterred, you decide to use your flight computer to solve your problem. But before you do that, what is your ground speed if you have covered 200 nautical miles in just 78 minutes?
- 152 knots
 - 154 knots
 - 232 knots
 - 185 miles per hour
14. With that question answered, you now have time to work on your first problem. The good news is that you started your stop watch exactly 3 minutes and 48 seconds ago as you passed through 1200 feet. Since your climb rate is 520 feet per minute, what is your altitude now?
- Enter your answer on the answer sheet**
15. If the pressure altitude is 10,000 feet and the temperature is -10 degrees C, what is the density altitude?
- 9280 feet
 - 10,000 feet
 - 11,098 feet
 - 12,468 feet

16. If the fuel burn is 11.5 gallons per hour, how much AVGAS will you burn in 1 hour and 54 minutes?
- 221 pounds
 - 290 kg
 - 22.1 gallons
 - 13.2 imperial gallons
17. If the OAT gauge reads -4 degrees F and you are at 172 knots indicated while cruising at 5000 feet, what is the true airspeed if you know that your thermometer always reads 6 degrees F warmer than the OAT actually is?
- 176 knots
 - 178 knots
 - 182 knots
 - 189 knots
18. How many statute miles are in 190 nautical miles?
- 165
 - 219
 - 221
 - 225
19. If the OAT is 5 degrees F and the Mach number is .36, what is the airspeed?
- 225 mph
 - 235 mph
 - 243 mph
 - 260 mph
20. Using a standard weight of 184 pounds per passenger, what is the weight of 32 passengers?
- 580 pounds
 - 2752 pounds
 - 2671 kg
 - 5800 kg
21. If the airspeed is 163mph, what is the time required to cover 272 statute miles?
- 1:00
 - 1:37
 - 1:40
 - 1:50

Use the following information to answer the next problems.

In the morning, the wind aloft is expected to be 180@10 knots, and the temperature at cruise to be 15 degrees C. In the evening, the wind aloft is expected to be 230@15 knots and the temperature is to be 5 degrees C. Indicated Airspeed is 138 mph, and fuel burn is 8.5 gallons per hour. You need to make stops in two cities, A and B. The true course from Home to A is 141 degrees. The true course from Home to B is 058 degrees. The magnetic variation is 7 degrees east.

22. In the morning, what would your ground speed be while cruising at 5500 feet pressure altitude between Home and A?
- 108 knots
 - 126 knots
 - 144 knots
 - 163 knots
23. If you were to wait until the evening to fly from Home to A, what groundspeed would you have instead?
- 128 knots
 - 133 knots
 - 144 knots
 - 152 knots

24. If you wait until the evening to fly a round trip from Home to point B and back, you will complete the trip sooner.
- True
 - False
25. If you had been able to fly from Home to A (85 statute miles) in 37 minutes and 45 seconds, you would suspect that the winds were different from the forecast. You would suspect this because your ground speed was:
- 135 knots
 - 126 knots
 - 117 knots
 - 108 knots
26. It turns out that after all of that fuss, you ended up running late and not actually departing from B to Home until noon, rendering your calculations worthless. During that flight, you noticed that you had to fly a magnetic heading of 228 degrees to stay on course. TAS was 130 knots and GS was 112 knots in this case. What were the winds (true direction)?
- 216@19 knots
 - 330@17 knots
 - 260@15 knots
 - 087@13 knots
27. What is the weight of 9 quarts of oil?
- 6.7 pounds
 - 15.0 pounds
 - 16.9 pounds
 - 18.0 pounds
28. How many inches are in a kilometer?
- Enter your answer on the answer sheet**
29. If you have travelled 284 statute miles in 3 hours and 8 minutes, what is your ground speed?
- 60.0 knots
 - 78.5 knots
 - 90.5 knots
 - 96.5 knots
30. You find yourself .17" forward of CG. You decide to move a 31 lb. duffel bag from station 54. If the CG limits are 61" to 69" and your weight is 4078 lb., what station will it end up at to bring you to the forward limit?
- 22
 - 32
 - 76
 - 63
31. At a climb rate of 2400 feet per minute and a ground speed of 105 knots, how many nautical miles will you cover during 5 minutes of climb?
- 8.5 nautical miles
 - 8.75 nautical miles
 - 9.0 nautical miles
 - Not enough information given
32. Reference the previous question. How many miles will you cover in 3500 feet of altitude gain?
- 1.53 statute miles
 - 1.53 nautical miles
 - 2.43 statute miles
 - 2.55 nautical miles

33. Convert 92 degrees C to degrees F:
- 128
 - 138
 - 148
 - 198
34. If AVGAS consumption is 15 pounds per hour, what is the fuel burn for 1 hour and 14 minutes?
- 3.1 gallons
 - 3.2 gallons
 - 18.3 gallons
 - 18.6 gallons
35. The winds are 299 degrees at 29 knots. On a course of 029 degrees at 129 knots TAS, what is the wind correction angle?
- 13 degrees
 - 15 degrees
 - 29 degrees
 - 90 degrees
36. Using the information from the previous question, what is the ground speed?
- 145 mph
 - 142 knots
 - 129 knots
 - 126 mph
37. With a fuel flow of 48 kilos per hour you have an endurance of 6:09 hours. The winds are 098° at 29 knots and your outbound course is 211° with an indicated airspeed of 176 knots. How far can you fly outbound before having to turn around so you don't run out of gas? Your pressure altitude of choice is 8,500' and the temperature is 11° C below standard.
- 592 nm
 - 616 nm
 - 224 nm
 - 528 nm
38. If the airport elevation is 5805 feet and the altimeter setting is 30.57 inches of mercury, what is the pressure altitude?
- 5155
 - 5555
 - 5805
 - 6042
39. On runway 6 the winds are 350@24 knots. What is the crosswind component?
- 7 knots from the left
 - 15 mph from the right
 - 26 mph from the left
 - 26 knots from the right
40. After you land your first airline job, a passenger asks you how fast your plane goes. Since you don't want to seem ignorant, you know to account for the difference between your IAS of 225 knots at 10,000 feet on a standard day is actually more like:
- 262 knots
 - 267 knots
 - 296 knots
 - 302 knots

41. Refer to the previous question. You give the passenger your answer, and he says, “Knots, what does that mean to me?” You say “Oh, that’s:
- a. about 250 miles per hour.”
 - b. about 275 miles per hour.”
 - c. about 300 miles per hour.”
 - d. about 325 miles per hour.”
42. Refer to the previous question. In return, your passenger replies, “Actually, I’m from Australia and only think of speeds in terms of kilometers per hour.” You realize that with his accent, you should have anticipated this scenario. Fortunately, you were the national champion of the computer accuracy event at the 2009 NIFA SAFECON, so you know to tell him, “Of course mate, that’s _____ kilos for a bloke like you.”
- a. **Enter your answer on the answer sheet, not in the space above!**