1. After reviewing the aircraft records, do you find that they represent an airworthy aircraft?

   A. No, you need an ELT inspection.
   B. No, you need a pitot-static inspection.
   C. No, you need a transponder inspection.
   D. Yes, everything is in order.

D. Everything is in order. Reference FARs 91.207, 91.409, 91.411 and 91.413.

2. Based on the information provided in the personal records, are you legal to fly today?

   A. Yes, with no restrictions.
   B. Yes, provided you are not carrying any passengers.
   C. Yes, provided you only carry passengers during the day.
   D. No, you need a biennial flight review.

B. See FAR 61.56 d. Your MD11 type rating ride relieves you of any need for a biennial flight review. However, FAR 61.57 a ii requires that you have 3 takeoff and landings in the preceding 90 days in the same category and class of aircraft. All of your landings have been in the MD-11, which is definitely not the same category and class as a Cessna 152.

3. Arriving at the Seward airport around 7:30am local time, you use your handy iPhone to get a weather briefing on DUATS. Which of the following is true about the current weather conditions at Seward?

   A. The actual temperature is 3.9 degrees, Celsius.
   B. The actual temperature is 3.9 degrees, Farenheit.
   C. The METAR was issued at 6:56am local time.
   D. None of the above.

A. See AIM 7-1-30, Key to Aerodrome Forecast (TAF) and Aviation Routine Weather Report (METAR.)

4. Given further consideration to the weather, what does METAR stand for?

   A. Meteorological Aviation Report.
   B. Meteorological Aeronautical Report.
   C. Aviation Routine Weather Report.
   D. Meteorological Airport Report.

C. See AIM 7-1-30.

5. You throw your 16 pound flight bag, 6 pound tackle box and 5 pound empty cooler in baggage area 1, then begin your preflight inspection. During the inspection, you realize that you only have 17 gallons of usable fuel on board. What will be your takeoff weight and center of gravity on takeoff from Seward?

   A. Takeoff weight 1448 pounds, center of gravity 32.48”
   B. Takeoff weight 1443 pounds, center of gravity 32.46”
   C. Takeoff weight 657 kilograms, center of gravity 32.46”
   D. Takeoff weight 655 kilograms, center of gravity 32.48”

B. See calculations at end of packet.

6. Because of the distance from Seward to Igiugig, you decide to stop for fuel in Kenai (ENA/PAEN.) Which of the following statements about Kenai airport is false?

   A. You can expect to have float planes operating on a water runway.
   B. You can expect to land on either runway 1L or 1R.
   C. You will need to contact the tower at Kenai before landing.
   D. There is patchy thin ice on the ramp at Kenai.

A. Per Runway NOTAM ENA 11/012, runway 1W/19W is closed. Therefore, sea planes would be unable to take off or land at Kenai airport.

7. Due to the terrain between Seward airport and Kenai, you decide follow a valley instead of going directly over terrain. You decide that your route of flight is going to be from Seward direct to N60 22, W150 00, then direct to Kenai at a cruising altitude of 6500 feet. Given this information, how long do you expect your flight to Kenai to be?

   A. 21:05
   B. 22:33
   C. 38:40
   D. 44:29

C See calculations at end of packet.

8. How much fuel will it take to top off your tanks to their full capacity of 24 gallons usable upon arrival in Kenai?

   A. 11.9 gallons
   B. 11.4 gallons
   C. 10.7 gallons
   D. 10.0 gallons

B. Reference calculations at end of packet.

9. To save on taxi time, you decide to attempt a departure off runway 16 at Seward. What will be your ground roll and distance to clear a 50 foot obstacle if you depart off that runway?

   A. 625’ ground roll/1162’ to clear obstacle
   B. 640’ ground roll/1190’ to clear obstacle
   C. 689’ ground roll/1279’ to clear obstacle
   D. 705’ ground roll/1310’ to clear obstacle

C. Reference calculations at end of packet.

10. Finally, you’re ready to go, but because you’re going to be flying over some rugged terrain, you decide to file a flight plan. Your internet connection on your iPhone isn’t that great, so you decide to call instead. What phone number would you use to contact Kenai flight service station?

   A. 1-800-WXBREIF
   B. 1-800-238-7527
   C. 1-866-238-7527
   D. 1-866-864-1737

D. Reference A/FD entry for Seward. (Note misspelling of “Brief” in answer A which if you dialed it as spelled would not get you flight service.

11. After engine start, taxi and run-up, you finally get going on your way to Kenai. As soon as you cross the runway's departure threshold you start your turn on course. What kind of hazards should you be looking out for as you climb out of Seward?

A. Flocks of migrating birds within 10 nautical miles of the airport.
B. Extensive hang gliding activity in the vicinity.
C. Strong wind currents and excessive up and downdrafts below 1000' AGL.
D. Extensive military training operations in the vicinity.

A. Reference A/FD entry for Seward.

12. What do you expect to see off the left side of your aircraft as you reach the top of your climb?

A. The southern edge of Skilar Lake.
B. The northern tip of a branch of the Harding Ice Field.
C. A cabin.
D. High tension power lines.

B. Reference calculations at end of packet and chart. Your climb will cover 19.8 nautical miles. Measuring 19.8 nautical miles from Seward and looking to the left of your course line you will see the narrow arm of the ice field just southeast of a 5321' mountain peak. Skilar Lake is much further along your route of flight, the cabin would be on the right side of the aircraft and there are no high tension power lines depicted on the chart.

13. On the same note as the previous question, near what landmark will you begin your descent?

A. Over Skilar Lake.
B. Crossing the Kenai River.
C. Abeam Soldotna Airport.
D. Over Mackeys Lakes.

B. Reference calculations at end of packet and chart. Your descent will cover 13.7 nautical miles. Measuring 13.7 nautical miles from Kenai puts you approximately over the Kenai River. Skilar Lake is would be too far out to start your descent based on the performance information given and Mackeys Lake and Soldotna are too close.

14. Just as you're turning onto the taxiway after landing, you notice a moose wander onto the runway you just vacated. Who, if anyone, should you report this to?

A. No one, you're clear of the runway now.
B. Kenai Flight Service Station
C. The airport manager at 907-283-7951.
D. The department of wildlife.

C. Reference A/FD entry for Kenai and AIM 7-4-4.

15. Who would you contact to close your VFR flight plan after landing on leg 1?

A. No one, Kenai Tower closed it automatically when you landed.
B. Kenai Flight Service at 866-864-1737.
C. Airport management at 907-283-7879.
D. Anchorage Center on 125.7.

B. Reference A/FD entry for Kenai.

16. After getting your aircraft refueled, you start planning for the next leg of your trip to Igiugig. Since you have more rugged terrain to cross, you decide on a cruising altitude of 10500 feet. If you take off from Kenai at 9:15am local time, what time do you expect to arrive in Igiugig?

A. 10:10am local time
B. 11:12am local time
C. 18:17 UTC
D. 18:58 UTC

D. Reference A/FD entry Igiugig and calculations at end of packet.

17. Near what landmark will you be reaching the top of your climb? (Choose the closest answer.)

A. The southwestern tip of Kalgin Island.
B. Over cabins on the western shore of the Cook Inlet.
C. Just north of Iliamna Volcano.
D. Abeam Chisik Island.

A. Reference calculations at end of packet and chart. You will cover 29 nautical miles while climbing to 10500 feet, which when measured along your course puts you just past the southwestern tip of Kalgin Island.

18. Satisfied with your route of flight and cruising altitude, you decide to get going. You file your flight plan, start engines and you're soon taking off. Since you're accustomed to living at sea level, you become concerned about the possibility of hypoxia as you cruise at 10500 feet. Which of the following symptoms should you be watching for?

A. Impaired alertness.
B. Headache.
C. Sense of euphoria.
D. All of the above.

D. Reference AIM 8-1-2.

19. At what cabin altitude would a healthy pilot expect to experience the symptoms of hypoxia on this flight?

A. 5000 feet.
B. 10000 feet.
C. 12000 feet.
D. 15000 feet.

C. Reference AIM 8-1-2.

20. True or false? Certain medications can cause the effects of hypoxia to begin at a much lower altitude than what would be normal for a healthy pilot.

A. True
B. False

A. Reference AIM 8 -1-2.

21. Fortunately, you don't seem to be encountering any symptoms of hypoxia, so you turn your mind to other matters. As approach the western coast of the Cook Inlet, you notice the Iliamna Volcano ahead and to your left and Redoubt Volcano to your right. What should you do if you were to observe either of these volcanoes suddenly erupt?

A. Nothing at all. Consider yourself lucky to be able to witness such an awesome event.
B. Remain upwind of the ash cloud and contact ATC as soon as possible to report the location and nature of the eruption.
C. Remain downwind of the ash cloud and contact ATC as soon as possible to report the location and nature of the eruption.
D. Nothing if operating VFR. If IFR, request ATC to provide vectors around the eruption or use onboard radar (if equipped) to avoid the ash cloud.

B. Reference AIM 7-5-9.

22. If you were to inadvertently encounter a volcanic ash cloud on your flight, what would you expect to experience?

A. A complete loss of engine power.
B. Unreliable airspeed indications.
C. St. Elmo's fire or other static discharges.
D. A complete loss of electrical power.

B. Reference AIM 7-5-9. Although piston aircraft are less likely to lose power, they can still receive major damage by flying through an ash cloud. Pitot systems can become clogged by volcanic ash, causing unreliable airspeed indications. St. Elmo's fire and static discharges are possible, but would not be as noticeable on a daytime flight such as this one.

23. If you wanted to obtain VFR flight following while enroute to Igiugig, who could you contact for this service?

A. Kenai Flight Service Station
B. Anchorage Approach Control
C. Kenai Tower
D. Anchorage Center

D. Reference AIM 4-1-17.

24. What will be your magnetic heading in cruise between Kenai and Igiugig?

A. 238
B. 219
C. 261
D. 257

B. Reference calculations at end of packet.

25. Looking at the chart, what is the dashed magenta line marked 19E signify?

A. An isogonic line signifying the variation between magnetic and true north.
B. The boundary of special use airspace.
C. An RNAV airway.
D. The boundary of a large area of class E airspace.

A. Reference any WAC or sectional chart legend.

26. As you clear the Chigmit Mountains and approach the eastern shore of Iliamna Lake, you realize that there is a solid layer of clouds below you. No problem, you're an experienced airline pilot so you can just get an IFR clearance to descend through the clouds. Which of the following agencies would be the best to contact for this type of assistance?

A. Kenai Flight Service Station on 121.2
B. Iliamna Flight Service Station on 123.6
C. Anchorage Approach on 118.8
D. Kenai Tower on 121.3

C. Reference A/FD entry for Igiugig.

27. How far from Igiugig should you start your descent?

A. 20.6 nautical miles
B. 20.6 statute miles
C. 33.2 kilometers
D. 12.8 kilometers

A. Reference calculations at end of packet.

28. After successfully getting below the cloud deck, you cancel your IFR clearance and resume VFR. As you near Igiugig, what frequency will you use to announce your position in the pattern?

A. None, this airport is so remote, it doesn't even have a CTAF.
B. 122.7
C. 122.8
D. 122.9

D. Reference Service NOTAM IGG 02/001 in the supplemental data packet.

29. Which of the following hazards do you need to be aware of at Igiugig airport?

A. Soft runway.
B. 6 inch circular ruts near the runway 23 threshold
C. Non-standard runway markings
D. All of the above

D. Reference A/FD entry for Igiugig.

30. What will be your landing roll and distance to clear a 50 foot obstacle in Igiugig? (Assume landing on gravel has the same effect as landing on dry grass.)

A. 703' ground roll/1462' to clear obstacle
B. 683' ground roll/1406' to clear obstacle
C. 652' ground roll/1582' to clear obstacle
D. 471' ground roll/1194' to clear obstacle

B. Reference calculations at end of packet.

31. After you land and park your aircraft, you get a ride from a local villager to the fishing site. The fish are really biting today, and it looks like you might have a heavy haul. How many pounds of fish can you load in the baggage compartment and still be legal to takeoff? (Your maximum takeoff weight is 1670 pounds.)

A. 241.2 pounds
B. 120 pounds
C. 93 pounds
D. 88.2 pounds

C. Reference calculations at end of packet and weight and balance data. Departing Kenai, you have a ramp weight of 1490 pounds and will burn 9.4 gallons (56.4 pounds) on this leg, giving you a landing weight of 1433.6. When you depart, you will burn another .8 gallons (4.8 pounds) of fuel during taxi and run up leaving you with a takeoff weight of 1428.8 pounds. 1670 pounds minus 1428.8 pounds is 241.2 pounds. However, the question asked how much you could load in the baggage compartment, which has a weight limitation of 120 pounds. Since you already have 27 pounds of gear in the baggage compartment, that only leaves room for 93 pounds of fish.

32. After catching the maximum amount of fish that you determined in question 31, you load it all in your cooler and place it back in baggage area 1. What will be your takeoff weight and C.G. from Igiugig?

A. Takeoff weight 1670 pounds, center of gravity 36.95”
B. Takeoff weight 1548.8 pounds, center of gravity 34.83”
C. Takeoff weight 1521.8 pounds, center of gravity 34.31”
D. Takeoff weight 1517 pounds, center of gravity 34.22”

C. Reference calculations at end of packet.

33. Due to yet more rugged Alaskan terrain and a long stretch over the freezing waters of the Cook Inlet, you elect to fly back to Seward at 11500 feet. In addition, you want to minimize your time over the Harding Ice Field, so instead of flying direct from Igiugig to Seward, you instead plan your route to fly Igiugig direct to N59 55 W149 25 then direct Seward. For purposes of this leg, you will also not start your descent until reaching N59 55 W149 25. On the descent, your TAS will be the same as your cruise TAS and your fuel flow will be 50% of your cruise fuel flow. Your winds on the descent will be the same as on the first two legs. Given this information, how long to you expect it to take you to fly from Igiugig to Seward?

A. 2:28:10
B. 1:21:42
C. 1:31:55
D. 2:48:38

A. Reference calculations at end of packet.

34. Thinking about how you'll have a long stretch of over water flying on the way home, and knowing your aircraft has roughly a 10 to 1 glide ratio, how far would you be able to glide if your aircraft's engine failed at 11500 feet over the Cook Inlet? (Assume no wind.)

A. 18.9 nautical miles
B. 18.9 statute miles
C. 21.8 nautical miles
D. 25 statute miles

A. A 10 to 1 glide ratio at 11500 feet (Cook Inlet is at sea level,) means you will glide 115000 feet in a no wind situation. 115000 feet is equals 18.9 nautical miles or 21.8 statute miles.

35. What is your indicated airspeed in cruise on this leg? (Use altimeter setting at Igiugig to determine pressure altitude.)

A. 93 knots
B. 75 knots
C. 65 knots
D. 80 knots

D. The altimeter setting at Igiugig is 29.82, meaning your pressure altitude in cruise is 11600 feet. The temperature at cruise altitude is -22 (see winds/temperatures aloft in supplemental data.) If you plug 11600 pressure altitude, -22C and 93 knots TAS into any manual or electronic flight computer, it will give you an indicated airspeed of 80 knots.

36. As you cross back over land on the east side of the Cook Inlet, you contemplate stopping in Homer (HOM/PAHO) to top off your tanks before returning to Seward. What, if any, issues do you need to be aware of before attempting to land at Homer?

A. From 1200 UTC on 23May, there is a forecast ceiling of 8000 overcast.
B. There is a temporary tower in place at the Homer airport.
C. There are people and equipment working on the airport grounds.
D. None of the above.

C. Reference NOTAMs in the supplemental data packet.

37. After deciding not to stop in Homer, you start refreshing your memory on things to be aware of at your home airport of Seward. You're planning on landing on runway 16. Are there any visual approach aids to that runway?

A. Yes, a VASI on the left side of the runway.
B. Yes, a VASI on the right side of the runway.
C. Yes, there is a PAPI.
D. There are no visual approach aids to runway 16 at Seward.

D Reference A/FD entry for Seward.

38. What rate of descent to you need to maintain to in order to start your descent at N59 55 W149 25 while still maintaining your cruise TAS? (Choose the closest answer.)

A. 1000 feet per minute
B. 1300 feet per minute
C. 1500 feet per minute
D. 2000 feet per minute

B. Reference calculations at end of packet. Maintaining your cruise TAS will yield a ground speed of 99 knots during the descent. The leg from N59 55 W149 25 to Seward is 14 nautical miles. At 99 knots it will take 8:29 to cover that distance. Seward airport is at 22 feet MSL, meaning you need to descend 11478 feet. To descend 11478 feet in 8:29, you need to descent at 1353 feet per minute, making B the best answer.

39. What do you need to make sure you avoid flying over as you enter the pattern at Seward airport?

A. A heliport located southwest of the airport.
B. A prison.
C. The main residential area of Seward.
D. The port facilities at Seward.

A. Reference A/FD entry for Seward.

40. What did you do wrong on this flight?

I. Turned on course too early after takeoff on leg 1.
II. Hit a mountain on leg 2.
III. Flew into a cloud on leg 3.
IV. Landed in Seward with less than required VFR fuel reserves.

A. II and III
B. I, II and III
C. II and IV
D. I, III and IV

D. I is an error, reference A/FD entry for Seward.
II is not an error because on leg 2, you were flying at 10500 feet. You flew around the highest mountains along that route and even if you had flown directly over them, you would have still cleared the peak by several hundred feet.
III is an error. When you departed on leg 3, you climbed to 11500 feet. The reported weather at departure had an overcast ceiling at 7000 feet.
IV is an error. When you departed on leg 3, you had 14.6 gallons of fuel remaining. You burned a total of 12.8 gallons on that leg, leaving 1.8 gallons when you arrived in Seward. With a cruise fuel burn on that leg of 4.5 gallons per hour, 1.8 gallons is well under the required 30 (45 at night) reserve fuel requirement for VFR.

Leg 1 Calculations:

	True Course	Wind	True Heading	True Airspeed	Ground Speed	Fuel Flow	Distance	Time	Fuel
Taxi/Run-up	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**.8**
Climb (SFC-6500 feet @ 425 fpm)	**308**	**140/08**	**307**	**70**	**78**	**7.1**	**19.8**	**15:15**	**1.8**
Cruise Part 1	**308**	**140/08**	**307**	**96**	**104**	**5.1**	**2.2**	**1:16**	**.1**
Cruise Part 2	**290**	**140/08**	**288**	**96**	**103**	**5.1**	**24.3**	**14:09**	**1.2**
Descent @ 800 fpm	**290**	**140/08**	**288**	**96**	**103**	**3.83**	**13.7**	**8:00**	**.5**
Total	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**60**	**38:40**	**4.4**

Takeoff Data:
Runway 16, temperature 4 degrees.
Wind 180/05 True/160/05 Magnetic equals 5 knot headwind component.
Field Elevation 22’ Altimeter 29.75
Pressure Altitude 192’ use 1000’ data per instructions in supplemental data.

	0 degrees	4 degree	10degrees	
Ground roll	**705**	**729**	**765**	**(6 feet/degree)**
Clear obstacle	**1310**	**1354**	**1420**	**(11 feet/degree)**

Subtract 10% for each 9 knots headwind. 5/9 equals .5555 or 5.55% reduction.

729 x 94.44% (5.55% less) = 689 feet ground roll after correction.
1354 x 94.44% (5.55% less) = 1279 feet for obstacle clearance correction.

Weight and Balance:

	Weight	Arm	Moment/1000
Basic Empty Weight	**1126**		**33.7**
Pilot	**193**	**39**	**7.527**
Bags	**27**	**64**	**1.728**
Fuel (17 gallons)	**102**	**40**	**4.08**
Total Ramp Weight	**1448**	**C.G. 32.48**	**47.035**
Taxi/Run-up Fuel (.8 gallon)	**-4.8**	**40**	**-.192**
Takeoff Weight	**1443.2**	**C.G. 32.46**	**46.843**
Fuel Burn (4.4gallons)	**-26.4**	**40**	**-1.056**
Landing Weight	**1438.4**	**C.G. 31.83**	**45.787**

Leg 2 Calculations:

	True Course	Wind	True Heading	True Airspeed	Ground Speed	Fuel Flow	Distance	Time	Fuel
Taxi/Run-up	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**.8**
Climb (SFC-10500 feet @ 425 fpm)	**242**	**140/08**	**236**	**70**	**71**	**7.1**	**29**	**24:28**	**2.9**
Cruise	**242**	**120/07**	**238**	**94**	**98**	**4.6**	**106.4**	**1:05:09**	**5.0**
Descent@ 800 fpm	**242**	**140/08**	**237**	**94**	**95**	**3.45**	**20.6**	**13:01**	**.7**
Total	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**156**	**1:42:38**	**9.4**

Takeoff Time: **17:15 zulu/09:15 local**
Arrival Time: **18:57:38 zulu/10:57:38 local rounds to 18:58 zulu/10:58 local**

Landing Data:
Runway 5/23, temperature 3 degrees.
Wind Calm
Field Elevation 90’ Altimeter 29.82
Pressure Altitude 190’ use 1000’ data per instructions in supplemental data.

	0 degrees	3 degree	10degrees	
Ground roll	**465**	**471**	**485**	**(2 feet/degree)**
Clear obstacle	**1185**	**1194**	**1215**	**(3 feet/degree)**

Add 45% of ground roll figure for dry grass runway.

471 x 145% (45% more) = 683 feet ground roll after correction.
1194 + 211.95 (45% of ground roll) = 1406 feet for obstacle clearance correction.

Weight and Balance:

	Weight	Arm	Moment/1000
Basic Empty Weight	**1126**		**33.7**
Pilot	**193**	**39**	**7.527**
Bags	**27**	**64**	**1.728**
Fuel (24 gallons)	**144**	**40**	**5.76**
Total Ramp Weight	**1490**	**C.G. 32.69**	**48.715**
Taxi/Run-up Fuel (.8 gallon)	**-4.8**	**40**	**-.192**
Takeoff Weight	**1485.2**	**C.G. 32.67**	**48.523**
Fuel Burn (8.6gallons)	**-51.6**	**40**	**-2.064**
Landing Weight	**1433.6**	**C.G. 32.41**	**46.459**

Leg 3 Calculations:

	True Course	Wind	True Heading	True Airspeed	Ground Speed	Fuel Flow	Distance	Time	Fuel
Taxi/Run-up	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**.8**
Climb (SFC-11500 @ 425fpm)	**080**	**140/08**	**086**	**70**	**66**	**7.1**	**29.5**	**26:51**	**3.2**
Cruise	**080**	**110/06**	**082**	**93**	**88**	**4.5**	**165.5**	**1:52:50**	**8.5**
Descent	**002**	**140/08**	**005**	**93**	**99**	**2.25**	**14**	**8:29**	**.3**
Total	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**209**	**2:28:10**	**12.8**

Weight and Balance:

	Weight	Arm	Moment/1000
Landing Weight Previous Leg	**1433.6**		**46.459**
Added Weight of Fish	**93**	**64**	**5.952**
Ramp Weight	**1526.6**	**C.G. 34.33**	**52.411**
Taxi/Run-up Fuel (.8 gallon)	**-4.8**	**40**	**-.192**
Takeoff Weight	**1521.8**	**C.G. 34.31**	**52.219**
Fuel Burn (12.0 gallons)	**-72**	**40**	**-2.880**
Landing Weight	**1449.8**	**C.G. 34.03**	**49.339**