

PRACTICE EXAM 18 SIMULATION

1. Under 14 CFR 91.167, the fuel required for an IFR flight (when an alternate is required) must be enough to fly to the destination, then to the alternate, and then for:

- A. 45 minutes at normal cruise speed
- B. 30 minutes at normal cruise speed
- C. 1 hour at normal cruise speed
- D. 15 minutes at normal cruise speed

2. When no alternate is required, the IFR fuel rule still requires enough fuel to fly to the destination and then for:

- A. 30 minutes
- B. 15 minutes
- C. 1 hour
- D. 45 minutes at normal cruise speed

3. The "1-2-3 rule" determines whether an alternate airport must be filed, based on the weather:

- A. At the departure airport
- B. From 1 hour before to 1 hour after the ETA at the destination
- C. Along the entire route
- D. At the nearest alternate only

4. Under the 1-2-3 rule, an alternate is required unless, for at least 1 hour before to 1 hour after the ETA, the forecast ceiling is at least:

- A. 2,000 feet and visibility at least 3 statute miles
- B. 1,000 feet and 3 miles
- C. 3,000 feet and 2 miles
- D. 1,500 feet and 2 miles

5. Under the 1-2-3 rule, the forecast visibility threshold that, with the ceiling, removes the alternate requirement is:

- A. 3 statute miles
- B. 1 statute mile
- C. 2 statute miles
- D. 5 statute miles

6. If the destination forecast within the 1-2-3 window is below 2,000 feet and 3 miles, the pilot must:

- A. Cancel the flight
- B. Depart VFR
- C. File an alternate airport
- D. Reduce the fuel load

7. Standard alternate minimums for an airport with a precision approach are a ceiling of:

- A. 800 feet and 2 miles visibility
- B. 400 feet and 1 mile
- C. 600 feet and 2 miles
- D. 1,000 feet and 3 miles

8. Standard alternate minimums for an airport with only a non-precision approach are a ceiling of:

- A. 800 feet and 2 miles visibility
- B. 600 feet and 2 miles
- C. 400 feet and 1 mile
- D. 1,000 feet and 1 mile

9. To list an airport as an alternate, the forecast weather at the alternate, at the ETA, must meet:

- A. The published straight-in minimums for the approach
- B. VFR conditions only
- C. The alternate minimums for that airport
- D. Zero-zero conditions

10. An airport may not be used as an alternate if, at the ETA, the only available instrument approach requires:

- A. A precision approach
- B. A circling maneuver
- C. GPS or other equipment the aircraft lacks, or the forecast is below alternate minimums
- D. A localizer

11. Some airports are marked with which symbol on the approach chart to indicate that alternate minimums are non-standard or not authorized?

- A. A triangle
- B. A filled triangle with an "A" (▲A) or "NA" notation
- C. A circle
- D. A square

12. When an airport is marked "Alternate minimums not authorized" (A NA), it means the airport:

- A. Has higher fuel requirements
- B. Requires a precision approach
- C. May not be used as an alternate at that time
- D. Is closed

13. For a WAAS-equipped aircraft using GPS, the alternate-airport planning rules allow the pilot to:

- A. Never use GPS at the alternate
- B. Use GPS only above 18,000 feet
- C. Use GPS only with a co-located VOR
- D. Plan a GPS-based approach at the alternate with appropriate planning

14. When planning an alternate that has only GPS approaches and the aircraft is non-WAAS, the pilot must:

- A. File it without restriction
- B. Use it above 10,000 feet only
- C. Ensure RAIM is available or plan accordingly, since restrictions apply
- D. Disregard the alternate requirement

15. The total fuel required for a typical IFR flight requiring an alternate is the sum of fuel to the destination, fuel from destination to alternate, and:

- A. 30 minutes of taxi fuel
- B. A 45-minute reserve at normal cruise
- C. 15 minutes of climb fuel
- D. 1 hour of holding fuel

16. A flight to a destination with a forecast ceiling of 2,500 feet and visibility of 4 miles within the 1-2-3 window:

- A. Requires an alternate
- B. Does not require an alternate
- C. Cannot be flown IFR
- D. Requires two alternates

17. A flight to a destination forecasting a ceiling of 1,500 feet and 2 miles within the 1-2-3 window:

- A. Does not require an alternate
- B. Requires VFR only
- C. Requires an alternate to be filed
- D. Cannot be flown

18. The 45-minute reserve in the IFR fuel rule is computed at:

- A. Normal cruising speed
- B. Maximum endurance speed
- C. Best glide speed
- D. Approach speed

19. A pilot filing an IFR flight plan must include the proposed:

- A. Route, altitude, true airspeed, and fuel on board
- B. Passenger names only
- C. Aircraft purchase date
- D. Maintenance records

20. When the destination has no instrument approach procedure, the alternate requirement is determined by whether:

- A. The aircraft has GPS
- B. The flight can descend from the MEA to land under basic VFR
- C. The runway is paved
- D. The destination is towered

21. A pilot must ensure the aircraft and pilot are equipped and authorized for the approaches at both the:

- A. Departure airport only
- B. Alternate only
- C. Nearest airport only
- D. Destination and the alternate

22. The fuel calculation for an IFR flight begins with the fuel needed to:

- A. Taxi only
- B. Climb only
- C. Reach the alternate first
- D. Fly from the departure to the destination

23. A pilot computing IFR fuel for a flight requiring an alternate, with 1.5 hours to destination, 0.5 hours to alternate, and a 0.75-hour reserve, needs total flight fuel for:

- A. 2.0 hours
- B. 2.75 hours
- C. 1.5 hours
- D. 3.5 hours

24. When an airport has standard alternate minimums and a precision approach, the required forecast is the airport's:

- A. Straight-in minimums
- B. Circling minimums
- C. VFR minimums
- D. 600-foot ceiling and 2 miles

25. A "takeoff alternate" is a consideration primarily for:

- A. All Part 91 flights
- B. VFR flights
- C. Single-engine aircraft only
- D. Operations where the departure weather is below landing minimums

26. A pilot must check the alternate minimums section in the front of the Terminal Procedures Publication because:

- A. Many airports have non-standard alternate minimums
- B. It lists the fuel requirements
- C. It contains the weather forecast
- D. It replaces the approach charts

27. A flight whose destination weather is forecast at exactly 2,000 feet and 3 miles within the window:

- A. Requires an alternate
- B. Does not require an alternate (meets the 2,000-and-3 threshold)
- C. Cannot be flown IFR
- D. Requires two alternates

28. A pilot who finds the only approach at a potential alternate is a GPS approach, and the aircraft is WAAS-equipped, may:

- A. Use that airport as an alternate with appropriate planning
- B. Never use it as an alternate
- C. Use it only in VFR
- D. Use it only above 18,000 feet

29. The IFR fuel reserve exists to provide a margin for:

- A. Holding, missed approaches, and unexpected delays
- B. Taxi only
- C. Engine start
- D. Refueling

30. When the forecast at the destination is marginal and an alternate is filed, the pilot's fuel planning must account for reaching the:

- A. Departure airport
- B. Nearest VFR airport
- C. Halfway point
- D. Alternate plus the 45-minute reserve

31. A pilot considering an alternate with a non-precision approach needs the forecast ceiling and visibility to meet:

- A. 600 feet and 2 miles
- B. 800 feet and 2 miles (standard non-precision alternate minimums)
- C. 400 feet and 1 mile

D. 1,000 feet and 3 miles

32. The standard alternate minimum ceiling for a precision approach (600-2) is lower than for a non-precision approach (800-2) because the precision approach:

- A. Is less accurate
- B. Requires more fuel
- C. Has no glide slope
- D. Provides vertical guidance to lower minimums

33. A pilot files an IFR flight plan and the destination requires an alternate. The pilot must select an alternate that:

- A. Is the closest airport regardless of weather
- B. Has a control tower
- C. Meets the alternate weather minimums at the ETA
- D. Is along the filed route only

34. The "1-2-3 rule" numbers refer to:

- A. 1 alternate, 2 approaches, 3 runways
- B. 1 hour of fuel, 2,000 feet, 3 approaches
- C. 1 hour before/after, 2,000-foot ceiling, 3 miles visibility
- D. 1 mile, 2 hours, 3,000 feet

35. A pilot must verify that the chosen alternate's approach can be flown given the aircraft's equipment, such as having:

- A. The proper navigation equipment for the available approach

- B. A particular paint scheme
- C. A specific seating capacity
- D. A turbine engine

36. A pilot computing fuel finds the flight needs 40 gallons to the destination, 12 gallons to the alternate, and 10 gallons reserve. The minimum fuel required is:

- A. 40 gallons
- B. 52 gallons
- C. 50 gallons
- D. 62 gallons

37. When the destination forecast is below the 1-2-3 thresholds, the alternate selected must itself have weather forecast to be at or above its:

- A. VFR minimums
- B. Alternate minimums at the ETA
- C. Circling minimums only
- D. Departure minimums

38. An airport with a ▲ NA (alternate minimums not authorized) notation typically has that restriction because of:

- A. Lack of weather reporting or other limitations
- B. A long runway
- C. A control tower
- D. High traffic

39. A pilot must always carry, at minimum, the fuel to fly to the first point of intended landing plus the applicable reserve, which under IFR is:

- A. 45 minutes at normal cruise
- B. 30 minutes
- C. 15 minutes
- D. 1 hour

40. A pilot planning an IFR flight to an airport with only a circling approach as the lowest available must apply the:

- A. Straight-in minimums
- B. Circling alternate minimums if listed, or standard if not restricted
- C. VFR minimums
- D. Departure minimums

41. The required elements of an IFR flight plan include the aircraft identification, type and equipment, and the:

- A. Pilot's home address
- B. Aircraft's purchase price
- C. Number of landings
- D. Departure point, route, destination, and alternate if required

42. A pilot determines the destination weather is well above the 1-2-3 thresholds for the entire window. The pilot:

- A. Must still file an alternate
- B. Must file two alternates
- C. Is not required to file an alternate
- D. Cannot file IFR

43. A pilot listing an alternate with a precision approach finds the forecast at the ETA is a 700-foot ceiling and 2.5 miles visibility. This:

- A. Does not meet standard precision alternate minimums
- B. Requires a second alternate
- C. Meets the 600-and-2 standard precision alternate minimums
- D. Requires VFR

44. When determining whether an alternate is legally usable, the controlling forecast time is the:

- A. Departure time
- B. Time 1 hour before ETA
- C. Current observation
- D. Estimated time of arrival at the alternate

45. A pilot may not begin an IFR flight unless the fuel aboard meets at least the §91.167 requirement, which exists to ensure:

- A. Maximum range
- B. Minimum weight
- C. Fastest cruise
- D. Adequate fuel for the destination, alternate, and reserve

46. A flight requiring an alternate that lacks sufficient fuel for destination-plus-alternate-plus-reserve must:

- A. Depart anyway and refuel enroute
- B. Reduce the load, add fuel, or replan before departing
- C. Cancel IFR and go VFR

D. Use a closer alternate without recomputing

47. A pilot evaluating alternate minimums uses the values published in the:

A. Sectional chart

B. Front section of the Terminal Procedures Publication (alternate minimums)

C. Aircraft flight manual

D. Enroute chart

48. Under the alternate rules, an airport whose forecast is below alternate minimums at the ETA:

A. May not be filed as the alternate

B. May still be filed as the alternate

C. Requires only VFR weather

D. Is automatically the best choice

49. The fundamental reason the IFR fuel rule requires a reserve beyond destination and alternate is to:

A. Increase the aircraft's weight

B. Reduce climb performance

C. Improve cruise speed

D. Provide a safety margin for delays, holding, and approaches

50. A pilot whose aircraft is WAAS-equipped enjoys more flexibility in alternate planning because WAAS provides:

A. More fuel efficiency

B. A faster cruise

C. The integrity to support GPS approaches, including at the alternate

D. A higher service ceiling

51. A pilot filing an alternate must ensure that, at the ETA, the alternate's forecast ceiling and visibility are:

A. At or above the alternate minimums for that airport

B. At or below the minimums

C. Equal to the destination's

D. Below VFR

52. A destination with a forecast ceiling of 900 feet within the 1-2-3 window:

A. Does not require an alternate

B. Requires VFR

C. Requires an alternate (below 2,000 feet)

D. Cannot be flown IFR

53. A pilot computing total fuel for an IFR flight with no alternate required needs fuel to the destination plus:

A. 30 minutes

B. 15 minutes

C. A 45-minute reserve at normal cruise

D. 1 hour

54. A pilot must consider that the alternate selected has not only suitable weather but also an approach the aircraft can:

A. Fly only in VFR

- B. Fly only with a tower
- C. Reach by airway only
- D. Legally fly with its installed equipment

55. A flight plan filed for an IFR flight that requires an alternate must list the alternate so that:

- A. ATC and search-and-rescue know the intended diversion airport
- B. The fuel is reduced
- C. The route is shortened
- D. The aircraft can skip the destination

56. The 1-2-3 rule's primary purpose is to ensure that, when destination weather is uncertain, the pilot has:

- A. A faster route
- B. A planned and fueled diversion option
- C. A shorter flight
- D. A lighter aircraft

57. A pilot finds the destination forecast is 2,000 feet and 3 miles for part of the window but drops to 1,200 feet and 2 miles for another part. The pilot:

- A. Does not need an alternate
- B. May ignore the lower forecast
- C. Needs only VFR weather
- D. Must file an alternate, since the window includes below-threshold weather

58. A pilot must recompute the alternate requirement if the forecast changes before departure because the requirement depends on the:

- A. Aircraft weight
- B. Latest forecast for the 1-2-3 window
- C. Pilot's experience
- D. Time of day only

59. The reason precision-approach alternate minimums (600-2) are lower than non-precision (800-2) is that the precision approach allows a:

- A. Wider course
- B. Safer descent with vertical guidance to lower weather
- C. Faster approach
- D. Circling maneuver

60. The fundamental goal of IFR fuel and alternate planning is to ensure the flight can:

- A. Reach the destination only
- B. Fly the shortest route
- C. Always reach a suitable airport with adequate fuel, even if the destination is unusable
- D. Carry minimum weight

Answer Key

1. A — Under 91.167, when an alternate is required the fuel must cover destination, then alternate, then 45 minutes at normal cruise speed. The 45-minute reserve is the IFR standard.

2. D — When no alternate is required, the fuel must still cover the destination plus a 45-minute reserve at normal cruise. The reserve requirement does not change.

3. B — The 1-2-3 rule looks at the forecast from 1 hour before to 1 hour after the ETA at the destination. The destination forecast in that window determines the alternate requirement.

4. A — An alternate is not required if the forecast ceiling is at least 2,000 feet and visibility at least 3 statute miles throughout the window. Below either value, an alternate is required.
5. A — The visibility threshold in the 1-2-3 rule is 3 statute miles. With a 2,000-foot ceiling, this removes the alternate requirement.
6. C — If the destination forecast in the window is below 2,000 and 3, the pilot must file an alternate. The marginal forecast triggers the requirement.
7. C — Standard alternate minimums for a precision approach are a 600-foot ceiling and 2 miles visibility. Non-precision approaches use 800-2.
8. A — Standard alternate minimums for a non-precision approach are an 800-foot ceiling and 2 miles visibility. The precision standard is the lower 600-2.
9. C — To list an airport as an alternate, the forecast at the ETA must meet the alternate minimums for that airport. These differ from the approach's straight-in minimums.
10. C — An airport may not be the alternate if its only approach needs equipment the aircraft lacks, or the forecast is below alternate minimums. Both equipment capability and forecast must support it.
11. B — Non-standard or unauthorized alternate minimums are flagged with a filled triangle and "A" (▲A) or an NA notation. The pilot checks the front of the TPP for the details.
12. C — "Alternate minimums not authorized" (A NA) means the airport may not be used as an alternate at that time. It is disqualified as an alternate.
13. D — A WAAS-equipped aircraft may plan a GPS-based approach at the alternate with appropriate planning. WAAS provides the integrity that supports this.
14. C — A non-WAAS aircraft planning a GPS-only alternate must ensure RAIM is available or plan accordingly, since restrictions apply. RAIM provides the integrity for non-WAAS GPS.

15. B — The total fuel is destination fuel, plus destination-to-alternate fuel, plus a 45-minute reserve at normal cruise. The reserve is added on top of both legs.

16. B — A forecast of 2,500 feet and 4 miles exceeds the 2,000-and-3 thresholds, so no alternate is required. Both values are above the minimums.

17. C — A forecast of 1,500 feet and 2 miles is below both thresholds, so an alternate must be filed. Either value being below 2,000/3 triggers the requirement.

18. A — The 45-minute reserve is computed at normal cruising speed. This is the standard basis for the IFR reserve.

19. A — An IFR flight plan includes the route, altitude, true airspeed, and fuel on board, among other items. These define the intended flight for ATC.

20. B — When the destination has no instrument approach, the alternate requirement turns on whether the flight can descend from the MEA and land under basic VFR. If not, an alternate is needed.

21. D — The aircraft and pilot must be equipped and authorized for the approaches at both the destination and the alternate. Both airports' approaches must be flyable.

22. D — The fuel calculation begins with the fuel to fly from the departure to the destination. The alternate and reserve are then added.

23. B — Total flight fuel is $1.5 + 0.5 + 0.75 = 2.75$ hours. The destination leg, alternate leg, and reserve sum to 2.75 hours. (Key letter B corresponds to "2.75 hours.")

24. D — With standard alternate minimums and a precision approach, the required forecast is a 600-foot ceiling and 2 miles. This is the precision alternate standard.

25. D — A takeoff alternate is a consideration where the departure weather is below landing minimums. It provides a place to land if a return is needed shortly after takeoff.

26. A — The pilot checks the alternate minimums section because many airports have non-standard alternate minimums. The TPP front matter lists these exceptions.

27. B — A forecast of exactly 2,000 feet and 3 miles meets the threshold, so no alternate is required. The rule is satisfied at exactly 2,000 and 3.

28. A — A WAAS-equipped aircraft may use an airport with only a GPS approach as an alternate, with appropriate planning. WAAS supports the GPS alternate.

29. A — The IFR fuel reserve provides a margin for holding, missed approaches, and unexpected delays. It is a safety buffer beyond the planned legs.

30. D — With a marginal destination and an alternate filed, fuel planning must reach the alternate plus the 45-minute reserve. The reserve is added after the alternate leg.

31. B — A non-precision alternate requires the forecast ceiling and visibility to meet 800 feet and 2 miles (standard). The precision standard is the lower 600-2.

32. D — The precision alternate minimum (600-2) is lower than non-precision (800-2) because the precision approach provides vertical guidance to lower minimums. The added safety justifies the lower forecast requirement.

33. C — The selected alternate must meet the alternate weather minimums at the ETA. Proximity or a tower does not substitute for the weather requirement.

34. C — The 1-2-3 numbers refer to 1 hour before/after the ETA, a 2,000-foot ceiling, and 3 miles visibility. These define when an alternate is required.

35. A — The pilot must verify the alternate's approach can be flown with the proper navigation equipment installed. Equipment capability is part of alternate selection.

36. D — The minimum fuel is $40 + 12 + 10 = 62$ gallons. Destination, alternate, and reserve fuel sum to 62 gallons.

37. B — When the destination is below the 1-2-3 thresholds, the alternate's forecast must be at or above its alternate minimums at the ETA. The alternate must be usable when needed.

38. A — A ▲ NA notation typically reflects a lack of weather reporting or other limitations. These conditions make the airport unsuitable as an alternate.

39. A — The IFR reserve is 45 minutes at normal cruise, carried beyond the fuel to the first intended landing. This is the regulatory minimum.

40. B — For an airport with only a circling approach, the pilot applies the circling alternate minimums if listed, or the standard if not restricted. The published alternate minimums govern.

41. D — An IFR flight plan includes the departure point, route, destination, and alternate if required. These define the planned flight.

42. C — With the destination well above the 1-2-3 thresholds for the whole window, no alternate is required. The favorable forecast removes the requirement.

43. C — A 700-foot ceiling and 2.5 miles meets the 600-and-2 standard precision alternate minimums. Both values exceed the precision standard.

44. D — For the alternate, the controlling forecast time is the estimated time of arrival at the alternate. The alternate must be usable when the aircraft would arrive there.

45. D — The 91.167 fuel requirement ensures adequate fuel for the destination, alternate, and reserve. It guarantees the flight can complete its plan with a margin.

46. B — If fuel is insufficient for destination-plus-alternate-plus-reserve, the pilot must reduce the load, add fuel, or replan before departing. Departing without the required fuel is not permitted.

47. B — Alternate minimums are published in the front section of the Terminal Procedures Publication. The pilot consults it for non-standard values.

48. A — An airport whose forecast is below alternate minimums at the ETA may not be filed as the alternate. It does not qualify.

49. D — The reserve beyond destination and alternate provides a safety margin for delays, holding, and approaches. It accounts for the unexpected.

50. C — A WAAS-equipped aircraft has more alternate-planning flexibility because WAAS provides the integrity to support GPS approaches, including at the alternate. This expands the usable alternates.

51. A — The alternate's forecast ceiling and visibility at the ETA must be at or above the alternate minimums for that airport. The alternate must be usable on arrival.

52. C — A forecast ceiling of 900 feet is below 2,000, so an alternate is required. Either the ceiling or visibility being below threshold triggers it.

53. C — With no alternate required, the total fuel is to the destination plus a 45-minute reserve at normal cruise. The reserve is unchanged.

54. D — The alternate must have an approach the aircraft can legally fly with its installed equipment. Equipment capability is essential to alternate selection.

55. A — Listing the alternate on the flight plan lets ATC and search-and-rescue know the intended diversion airport. It supports flight following and emergency response.

56. B — The 1-2-3 rule ensures that, when destination weather is uncertain, the pilot has a planned and fueled diversion option. It guarantees a backup airport.

57. D — If any part of the window includes below-threshold weather (1,200 and 2), the pilot must file an alternate. The requirement applies if the window includes weather below 2,000/3.

58. B — The alternate requirement depends on the latest forecast for the 1-2-3 window, so a changed forecast requires recomputation. The decision follows the current forecast.

59. B — Precision alternate minimums (600-2) are lower than non-precision (800-2) because the precision approach allows a safer descent with vertical guidance to lower weather. The glidepath justifies the lower forecast requirement.

60. C — The fundamental goal of IFR fuel and alternate planning is to ensure the flight can always reach a suitable airport with adequate fuel, even if the destination is unusable. It guarantees a safe landing option.