

# PRACTICE EXAM 8 SIMULATION

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1. A holding pattern is a maneuver used primarily to:
  - A. Increase airspeed before an approach
  - B. Descend rapidly to the MDA
  - C. Keep an aircraft within defined airspace while awaiting further clearance
  - D. Reverse course on an airway
  
2. A standard holding pattern uses turns in which direction unless otherwise specified?
  - A. Left turns
  - B. Alternating turns
  - C. Right turns
  - D. No turns
  
3. A holding pattern with left turns is referred to as a:
  - A. Standard pattern
  - B. Nonstandard pattern
  - C. Teardrop pattern
  - D. Direct pattern
  
4. At or below 14,000 feet MSL, the inbound leg of a standard holding pattern is timed for:
  - A. 30 seconds
  - B. 2 minutes

- C. 45 seconds
- D. 1 minute

5. Above 14,000 feet MSL, the inbound leg of a holding pattern is timed for:

- A. 1 minute
- B. 30 seconds
- C. 45 seconds
- D. 1.5 minutes

6. In a holding pattern, the pilot times which leg to the standard value?

- A. The first turn
- B. The outbound leg
- C. The inbound leg
- D. The entry leg only

7. The outbound leg of a holding pattern is adjusted in length and heading in order to:

- A. Achieve the correct inbound leg time and correct for wind
- B. Increase the holding airspeed
- C. Match the entry sector exactly
- D. Avoid the holding fix

8. The three standard holding pattern entries are:

- A. Left, right, and straight
- B. Inbound, outbound, and abeam

- C. Direct, parallel, and teardrop
- D. Standard, nonstandard, and offset

9. The choice of holding entry is determined by:

- A. The aircraft's true airspeed
- B. The assigned altitude
- C. The wind direction only
- D. The angle of arrival relative to the holding course

10. A direct entry is used when the aircraft arrives from the sector that allows it to:

- A. Parallel the outbound course on the non-holding side
- B. Offset 30 degrees toward the holding side
- C. Reverse course at the fix
- D. Fly to the fix and turn directly to fly the outbound leg in the direction of the holding turns

11. In a parallel entry, the pilot flies to the fix, then turns to parallel the outbound course on the:

- A. Holding side
- B. Non-holding side
- C. Inbound course exactly
- D. Reciprocal of the holding radial

12. In a teardrop entry, the pilot flies to the fix and turns to a heading offset approximately how many degrees from the outbound course toward the holding side?

- A. 10 degrees
- B. 45 degrees

- C. 30 degrees
- D. 90 degrees

13. For a standard holding pattern, the sector division commonly used to determine the entry is:

- A. 70 degrees and 110 degrees
- B. 45 degrees and 135 degrees
- C. 90 degrees and 90 degrees
- D. 60 degrees and 120 degrees

14. The direct entry sector for a standard hold is the largest, covering approximately:

- A. 180 degrees of arrival headings
- B. 70 degrees
- C. 110 degrees
- D. 30 degrees

15. A recommended technique for determining the holding entry is to:

- A. Memorize each degree without visualization
- B. Always use a teardrop entry
- C. Visualize the holding pattern oriented on the heading indicator relative to present heading
- D. Wait until passing the fix to decide

16. When holding in a crosswind, a common technique is to correct the outbound leg heading by approximately:

- A. The same angle as the inbound wind correction
- B. Triple the inbound wind correction angle

- C. No correction at all
- D. The reciprocal of the inbound heading

17. Timing of the outbound leg in a holding pattern begins:

- A. When crossing the fix inbound
- B. At the start of the first turn
- C. Halfway through the outbound turn
- D. Abeam the fix, or wings-level outbound if abeam cannot be determined

18. A holding pattern consists of two 180-degree turns connecting the legs, normally flown at:

- A. Standard rate (3 degrees per second)
- B. Half-standard rate
- C. A 45-degree bank
- D. Maximum rate

19. A pilot arriving at a holding fix on a heading nearly aligned with the inbound course, from the non-holding side, would most likely use a:

- A. Direct entry
- B. Teardrop entry
- C. Standard rate climb
- D. Parallel entry

20. A pilot receives an "expect further clearance" (EFC) time while holding. In a lost-communications scenario, the EFC time is used to determine:

- A. The transponder code to squawk

- B. When to depart the holding fix and continue
- C. The frequency to monitor
- D. The holding airspeed

21. Leaving an assigned holding fix or point is a report that is:

- A. Required at all times
- B. Required only when not in radar contact
- C. Required only above 14,000 feet
- D. Not required if an EFC was issued

22. A pilot must report the time and altitude at which the aircraft reaches a holding fix or clearance limit. This report is:

- A. Required only in VFR conditions
- B. Required at all times
- C. Optional at the pilot's discretion
- D. Required only when an alternate was filed

23. A standard holding pattern's inbound leg is flown:

- A. Away from the holding fix
- B. Perpendicular to the holding course
- C. Toward the holding fix on the holding course
- D. On the non-holding side only

24. A pilot determines that, based on the arrival angle, a parallel entry is appropriate. After paralleling the outbound course, the pilot:

- A. Turns back toward the fix and intercepts the inbound course
- B. Continues outbound indefinitely
- C. Reverses to a teardrop entry
- D. Climbs to the next altitude

25. When holding, if the pilot cannot determine the abeam position, outbound timing should begin when the aircraft is:

- A. Crossing the fix inbound
- B. At the midpoint of the inbound leg
- C. Halfway through the second turn
- D. Wings-level outbound

26. A pilot holding at 9,000 feet MSL should time the inbound leg for:

- A. 30 seconds
- B. 1 minute
- C. 1.5 minutes
- D. 2 minutes

27. The protected airspace of a holding pattern is designed around the:

- A. Outbound leg only
- B. Non-holding side
- C. Entry sector exclusively
- D. Holding side, where the pattern is flown

28. A pilot flies a teardrop entry by proceeding to the fix, turning to the offset outbound heading toward the holding side, flying outbound for the timed leg, then:

- A. Reversing course to a parallel entry
- B. Holding the offset heading indefinitely
- C. Turning to intercept the inbound course
- D. Climbing to the EFC altitude

29. A holding clearance specifies a nonstandard pattern. This means the pilot should make:

- A. Right turns
- B. Left turns
- C. No turns
- D. Alternating turns

30. The maximum holding airspeeds are published to ensure the aircraft remains within:

- A. The assigned altitude block
- B. The protected holding airspace
- C. The entry sector
- D. The inbound leg time

31. A pilot holding above 14,000 feet MSL adjusts the outbound leg so that the inbound leg times out at:

- A. 30 seconds
- B. 1 minute
- C. 1.5 minutes
- D. 2 minutes

32. The holding fix is the point:

- A. Where the missed approach begins
- B. Around which the holding pattern is flown
- C. Where the aircraft descends to the MDA
- D. At the departure end of the runway

33. A standard holding pattern, viewed from above, has the shape of a:

- A. Racetrack (oval)
- B. Figure eight
- C. Triangle
- D. Straight line

34. When entering a hold with a direct entry, upon reaching the fix the pilot:

- A. Parallels the outbound course on the non-holding side
- B. Offsets 30 degrees away from the holding side
- C. Turns in the direction of the holding turns to fly outbound
- D. Reverses course immediately

35. A pilot crossing the holding fix to begin the pattern should start timing the inbound leg:

- A. At the start of the entry
- B. Over the fix inbound (or wings-level inbound)
- C. Abeam the fix outbound
- D. At the EFC time

36. A pilot uses wind correction on the inbound leg of a hold and then applies a larger correction on the outbound leg primarily because:

- A. The shorter time aloft on the outbound turn requires a greater crab to compensate for wind drift
- B. The outbound leg is always longer
- C. Wind affects only the outbound leg
- D. The holding fix moves with the wind

37. The reason a pilot times the inbound rather than the outbound leg is that the:

- A. Outbound leg is unaffected by wind
- B. Inbound leg cannot be timed
- C. Inbound leg is the standardized length that defines the pattern
- D. Outbound leg has no defined direction

38. A holding pattern entry that requires the pilot to fly past the fix, turn to parallel the outbound heading on the non-holding side, then return is the:

- A. Direct entry
- B. Teardrop entry
- C. Offset entry
- D. Parallel entry

39. A pilot is cleared to hold "as published" at a fix depicted on the approach chart. The pilot should:

- A. Use left turns regardless of the chart
- B. Make up a pattern based on wind
- C. Always use a direct entry
- D. Fly the pattern exactly as depicted on the chart

40. The two 180-degree turns in a holding pattern, combined with the inbound and outbound legs, produce the characteristic:

- A. Figure-eight track
- B. Oval racetrack track
- C. Triangular track
- D. Straight-line track

41. A pilot determines the entry by visualizing the heading indicator. If the holding pattern's protected side is on the side the aircraft can turn directly into, the entry is a:

- A. Teardrop entry
- B. Parallel entry
- C. Nonstandard entry
- D. Direct entry

42. When holding, the pilot maintains the assigned altitude and:

- A. Increases speed each lap
- B. Descends 500 feet per lap
- C. Climbs to the EFC altitude
- D. Holds the assigned altitude throughout

43. A pilot holding at 16,000 feet MSL times the inbound leg for:

- A. 1.5 minutes
- B. 1 minute
- C. 45 seconds
- D. 30 seconds

44. The purpose of the EFC time issued with a holding clearance is to provide:

- A. The holding airspeed limit
- B. The entry sector to use
- C. A time to expect onward clearance, important if communications are lost
- D. The inbound leg timing

45. A pilot arriving at a holding fix from within the direct-entry sector flies to the fix and then:

- A. Parallels the outbound course on the non-holding side
- B. Turns to fly outbound in the direction of the turns
- C. Offsets 30 degrees toward the holding side
- D. Reverses course on the inbound radial

46. A holding pattern's "abeam" position refers to the point where the aircraft is:

- A. Crossing the fix inbound
- B. Directly over the holding fix
- C. At the end of the inbound leg
- D. Abeam the holding fix on the outbound leg

47. When wind would push the aircraft into the holding pattern, the pilot adjusts the outbound leg by:

- A. Lengthening it without heading change
- B. Reversing the turn direction
- C. Applying a wind correction angle and adjusting outbound time
- D. Ignoring the wind on the outbound leg

48. A pilot determines the holding entry to be a teardrop. Compared with a direct entry, the teardrop is used when the aircraft arrives:

- A. From the sector requiring an offset turn toward the holding side at the fix
- B. Directly aligned with the holding turns
- C. From the non-holding side near the inbound course
- D. Perpendicular to the outbound leg from the holding side

49. The standard rate used for the turns in a holding pattern means each 180-degree turn takes approximately:

- A. 1 minute
- B. 30 seconds
- C. 2 minutes
- D. 45 seconds

50. A pilot must read back a holding clearance when issued by ATC because it:

- A. Is only advisory
- B. Contains a hold that must be confirmed
- C. Replaces the flight plan
- D. Cancels the IFR clearance

51. A holding pattern depicted on an enroute chart at an intersection would most likely be entered using which determination method?

- A. Always a parallel entry
- B. Comparing the inbound heading to the holding course to find the sector
- C. Always a direct entry
- D. Based on the aircraft's weight

52. A pilot holding in strong wind notices the inbound leg is consistently too long. The pilot should:

- A. Shorten the outbound leg
- B. Lengthen the outbound leg
- C. Increase airspeed
- D. Reverse the pattern direction

53. The inbound course of a holding pattern is the course flown:

- A. Away from the fix on the outbound leg
- B. Perpendicular to the holding radial
- C. On the non-holding side
- D. Toward the holding fix

54. A pilot flying a parallel entry parallels the outbound course for the appropriate time, then turns toward the holding side to:

- A. Intercept the inbound course and the fix
- B. Begin a teardrop
- C. Exit the hold
- D. Climb to the next altitude

55. A pilot holding receives no EFC time and loses communications. The pilot should:

- A. Hold indefinitely at the fix
- B. Squawk 1200 and proceed VFR
- C. Continue per 91.185, leaving the fix to begin the approach in accordance with the lost-comm procedures and timing
- D. Descend immediately to the MDA

56. The holding side of a standard pattern, relative to the inbound course, is on the:

- A. Left
- B. Right
- C. Either side equally
- D. Outbound leg only

57. A pilot determines that the arrival heading falls within the parallel-entry sector. The parallel entry is appropriate when the aircraft arrives from the:

- A. Non-holding side, roughly opposite the holding-turn direction near the inbound course
- B. Holding side aligned with the turns
- C. Sector requiring a teardrop offset
- D. Direct-entry sector

58. A pilot holding at 8,000 feet MSL with a 20-knot headwind on the inbound leg should expect the inbound leg, timed at 1 minute, to result in an outbound leg that is:

- A. Longer than 1 minute to compensate for the headwind reducing inbound groundspeed
- B. Exactly 1 minute
- C. Shorter than the inbound leg always
- D. Eliminated entirely

59. A standard holding pattern flown at a fix uses right turns, a 1-minute inbound leg at or below 14,000 feet, and an entry determined by:

- A. The wind direction
- B. The aircraft's airspeed
- C. The assigned altitude
- D. The angle of arrival relative to the holding course

60. The fundamental reason holding patterns are standardized in geometry and timing is to:

- A. Increase the aircraft's fuel efficiency
- B. Allow steeper turns
- C. Keep the aircraft predictably within protected airspace
- D. Eliminate the need for ATC clearance

## Answer Key

1. C — A holding pattern keeps an aircraft within defined airspace while awaiting further clearance, such as for traffic sequencing or weather. It is a means of delay, not of changing speed or descending.
2. C — A standard holding pattern uses right turns unless a left-turn (nonstandard) pattern is specified. Right turns are the default geometry.
3. B — A holding pattern with left turns is a nonstandard pattern, which must be specified by ATC or charted. The standard pattern uses right turns.
4. D — At or below 14,000 feet MSL, the inbound leg is timed for 1 minute. Above 14,000 feet the inbound leg is timed for 1.5 minutes.
5. D — Above 14,000 feet MSL, the inbound leg is timed for 1.5 minutes. The 1-minute timing applies at or below 14,000 feet.
6. C — The pilot times the inbound leg to the standard value and adjusts the outbound leg to achieve it. The inbound leg is the standardized reference.
7. A — The outbound leg is adjusted in length and heading to achieve the correct inbound leg time and to correct for wind. It is the variable leg used to make the inbound leg come out right.

8. C — The three standard holding entries are direct, parallel, and teardrop. They are selected based on the angle of arrival relative to the holding course.

9. D — The entry is determined by the angle of arrival relative to the holding course, using the sector division. Airspeed, altitude, and wind do not determine the entry type.

10. D — A direct entry has the pilot fly to the fix and turn directly to fly the outbound leg in the direction of the holding turns. It is used when arriving from the holding-side sector.

11. B — In a parallel entry, the pilot parallels the outbound course on the non-holding side, then turns back toward the fix to intercept the inbound course. The parallel leg is flown on the non-holding side.

12. C — A teardrop entry uses a heading offset about 30 degrees from the outbound course toward the holding side. The pilot flies outbound on that offset, then turns to intercept the inbound course.

13. A — For a standard hold, the 70-degree and 110-degree sector division determines the entry. This split defines the direct, teardrop, and parallel sectors.

14. A — The direct-entry sector is the largest, covering roughly 180 degrees of arrival headings. The teardrop and parallel sectors handle the remaining arrivals.

15. C — A recommended technique is to visualize the holding pattern oriented on the heading indicator relative to the present heading. This makes the geometry reveal the entry without memorizing degrees.

16. B — A common technique is to correct the outbound leg heading by about triple the inbound wind correction angle. The shorter time aloft on the outbound turn requires a larger crab.

17. D — Outbound timing begins abeam the fix, or wings-level outbound if abeam cannot be determined. This standardizes when the outbound leg clock starts.

18. A — The two 180-degree turns are normally flown at standard rate (3 degrees per second). This is the standard turn rate for holding.

19. D — Arriving nearly aligned with the inbound course from the non-holding side calls for a parallel entry. The parallel entry handles arrivals from that sector.

20. B — In a lost-communications scenario, the EFC time determines when the pilot departs the holding fix and continues. It governs the timing of the continued flight, not the squawk or frequency.

21. A — Leaving an assigned holding fix or point is a report required at all times under 91.183. It applies regardless of radar contact.

22. B — Reporting the time and altitude reaching a holding fix or clearance limit is required at all times. This is one of the always-required reports.

23. C — The inbound leg is flown toward the holding fix on the holding course. The outbound leg, by contrast, is flown away from the fix.

24. A — After paralleling the outbound course in a parallel entry, the pilot turns back toward the fix and intercepts the inbound course. This rejoins the standard pattern.

25. D — If the abeam position cannot be determined, outbound timing begins when the aircraft is wings-level outbound. This provides a consistent start point.

26. B — At 9,000 feet MSL (at or below 14,000), the inbound leg is timed for 1 minute. The 1.5-minute timing applies only above 14,000 feet.

27. D — The protected airspace is designed around the holding side, where the pattern is actually flown. Staying within the pattern keeps the aircraft in protected airspace.

28. C — After flying the offset outbound leg in a teardrop entry, the pilot turns to intercept the inbound course. This rejoins the holding pattern.

29. B — A nonstandard pattern means left turns. The pilot makes left turns instead of the standard right turns.

30. B — Maximum holding airspeeds ensure the aircraft remains within the protected holding airspace. Exceeding them could carry the aircraft outside protected airspace.

31. C — Above 14,000 feet, the outbound leg is adjusted so the inbound leg times out at 1.5 minutes. This is the high-altitude inbound timing.

32. B — The holding fix is the point around which the holding pattern is flown. It anchors the racetrack geometry.

33. A — A standard holding pattern is shaped like a racetrack (oval) when viewed from above. The two legs and two 180-degree turns form the oval.

34. C — In a direct entry, upon reaching the fix the pilot turns in the direction of the holding turns to fly outbound. This is the simplest entry, used from the holding-side sector.

35. B — Inbound timing begins over the fix inbound (or wings-level inbound). This marks the start of the standardized inbound leg.

36. A — The larger outbound correction compensates for wind drift during the relatively shorter time on the outbound turn, so the inbound leg comes out correctly. Tripling the inbound crab is the common technique.

37. C — The inbound leg is timed because it is the standardized length that defines the pattern. The outbound leg is adjusted to make the inbound leg come out to that standard.

38. D — Flying past the fix, paralleling the outbound heading on the non-holding side, then returning describes the parallel entry. The teardrop, by contrast, uses an offset toward the holding side.

39. D — Cleared to hold "as published," the pilot flies the pattern exactly as depicted on the chart, including its turn direction. The charted depiction governs.

40. B — The two 180-degree turns plus the inbound and outbound legs produce the oval racetrack track. This is the standard holding shape.
41. D — If the protected (holding) side is on the side the aircraft can turn directly into, the entry is a direct entry. This visualization shortcut identifies the direct sector.
42. D — During holding, the pilot maintains the assigned altitude throughout. Holding does not involve climbing or descending each lap.
43. A — At 16,000 feet MSL (above 14,000), the inbound leg is timed for 1.5 minutes. The 1-minute timing applies only at or below 14,000 feet.
44. C — The EFC time provides a time to expect onward clearance, which becomes critical if communications are lost. It governs when to leave the fix in a lost-comm scenario.
45. B — Arriving within the direct-entry sector, the pilot flies to the fix and turns to fly outbound in the direction of the turns. This is the direct entry.
46. D — The abeam position is where the aircraft is abeam the holding fix on the outbound leg. Outbound timing typically begins at this point.
47. C — When wind would push the aircraft into the pattern, the pilot applies a wind correction angle and adjusts the outbound time. Ignoring the wind would distort the pattern.
48. A — A teardrop entry is used when the aircraft arrives from the sector requiring an offset turn toward the holding side at the fix. The direct entry, by contrast, is for arrivals aligned with the holding turns.
49. B — At standard rate (3 degrees per second), each 180-degree turn takes about 30 seconds. A full 360 takes two minutes.

50. B — A holding clearance contains a hold that must be read back to confirm accurate receipt. Clearances with a hold require readback.

51. B — A charted hold at an intersection is entered by comparing the inbound heading to the holding course to find the sector. The arrival angle determines the entry.

52. A — If the inbound leg is consistently too long, the pilot should shorten the outbound leg. The outbound leg is adjusted to bring the inbound time to standard.

53. D — The inbound course of a holding pattern is the course flown toward the holding fix. The outbound leg is flown away from the fix.

54. A — After paralleling the outbound course for the appropriate time, the pilot turns toward the holding side to intercept the inbound course and the fix. This rejoins the pattern.

55. C — With no EFC time and lost communications, the pilot continues per 91.185, leaving the fix to begin the approach in accordance with the lost-comm procedures and timing. Holding indefinitely or proceeding VFR would be incorrect.

56. B — The holding side of a standard pattern is on the right of the inbound course, consistent with right turns. A nonstandard pattern places the holding side on the left.

57. A — A parallel entry is appropriate when the aircraft arrives from the non-holding side, roughly opposite the holding-turn direction near the inbound course. This sector calls for paralleling the outbound course before rejoining.

58. A — A headwind on the inbound leg reduces inbound groundspeed, so to hit the 1-minute inbound time the outbound leg must be longer to compensate. The pilot lengthens the outbound leg into a headwind situation.

59. D — A standard hold uses right turns, a 1-minute inbound leg at or below 14,000 feet, and an entry determined by the angle of arrival relative to the holding course. The arrival angle, not wind, speed, or altitude, sets the entry.

60. C — Holding patterns are standardized in geometry and timing to keep the aircraft predictably within protected airspace. The standardization ensures obstacle and traffic protection.