

U.S.C.G. Merchant Marine Exam
Master/Chief Mate Offshore Supply Vessels
Q203 Navigation General – Near Coastal
(Sample Examination)

Choose the best answer to the following Multiple-Choice Questions.

1. You are on course 238°T. To check the course of your vessel you should observe a celestial body on which bearing?
- A. 180°
 - B. 238°
 - C. 328°
 - D. 090°

Correct answer: C

2. You take a bearing of 264° of a lighthouse. What bearing of another object would give the best fix?
- A. 350°
 - B. 289°
 - C. 120°
 - D. 081°

Correct answer: A

3. Which is a characteristic of anticyclones?
- A. Overcast skies
 - B. Dry, fair weather
 - C. Gustiness and continuous precipitation
 - D. High winds and cloudiness

Correct answer: B

4. Atmospheric pressure may be measured with which instrument?
- A. A psychrometer
 - B. A thermometer
 - C. An aneroid barometer
 - D. A refractor

Correct answer: C

5. On a clear, warm day, you notice the approach of a tall cumulus cloud. The cloud top has hard well-defined edges and rain is falling from the dark lower edge. What should you expect if this cloud passes directly overhead?
- A. The wind will back as it passes
 - B. A sudden decrease in wind speed
 - C. The wind speed will not change as it passes
 - D. A sudden increase in wind speed

Correct answer: D

6. The greater the pressure difference between a high and a low-pressure center, the _____.
- A. warmer the temperature will be
 - B. greater the force of the wind will be
 - C. cooler the temperature will be
 - D. dryer the air mass will be

Correct answer: B

7. What does the shoreline on charts generally represent?
- A. The mean tide level
 - B. The mean high-water line
 - C. The mean low water spring line
 - D. The mean low water line

Correct answer: B

8. Which is TRUE of an occulting light?
- A. There is only a partial eclipse of the light
 - B. The period of light exceeds the period of darkness
 - C. The period of darkness exceeds the period of light
 - D. The periods of light and darkness are equal

Correct answer: B

9. Which is TRUE concerning Spring tides?
- A. Spring Tides are always unpredictable
 - B. Spring Tides only occur in the spring of the year
 - C. Spring Tides have lows higher than normal and highs lower than normal
 - D. Spring Tides have lows lower than normal and highs higher than normal

Correct answer: D

10. Which measurement uses mean high water as the reference plane?
- A. All vertical measurements on charts
 - B. Soundings on the East and West Coasts
 - C. Heights above water of land features such as lights
 - D. Water depths on the East Coast only

Correct answer: C

11. Which is TRUE of the tides in Boston Harbor?
- A. The tides are diurnal in nature
 - B. The tides have a greater range than the tides in Gulf Coast ports
 - C. The tides have their variations caused by the changing declination of the Moon
 - D. All of the above

Correct answer: B

12. Which statement about a gnomonic chart is correct?

- A. Parallels, except the equator, appear as curved lines.
- B. Distance is measured at the mid-latitude of the track line.
- C. Meridians appear as curved lines converging toward the nearer pole.
- D. A rhumb line appears as a straight line.

Correct answer: A

13. Your vessel is located at position I on the weather map in illustration D013NG below. You should experience which weather condition?

- A. Steady precipitation
- B. Clear skies with warm temperatures
- C. Overcast skies with rising temperature
- D. Thundershowers

Correct answer: D

14. The velocity of a rotary tidal current will be decreased when the Moon is at which phase?

- A. Full
- B. Apogee
- C. Perigee
- D. New

Correct answer: B

15. The height of a light is measured from which reference plane?

- A. Geographical sea level
- B. Mean low water
- C. Mean high water
- D. Average water level

Correct answer: C

16. Yesterday your chronometer read 03h 01m 56s at the 1500 GMT time tick. Today your chronometer read 03h 01m 58s at the 1500 GMT time tick. What is the chronometer error?

- A. +2s
- B. 01m 58s fast
- C. -2s
- D. 03h 01m 58s fast

Correct answer: B

17. The dry bulb temperature is 78oF and the wet bulb temperature is 62oF. What is the relative humidity?

- A. 16%
- B. 24%
- C. 39%
- D. 79%

Correct answer: C

18. When does a current perpendicular to a vessel's track have the greatest effect on the vessel's course made good?

- A. In shallow water
- B. At low vessel speeds
- C. At high vessel speeds
- D. In deep water

Correct answer: B

19. Which statement is TRUE concerning a Mercator projection?

- A. Degrees of longitude decrease in length as latitude increases.
- B. The length of the meridians is increased to provide for equal expansion in all directions.
- C. The mileage between the meridians is increased as the latitude increases.
- D. The length of the meridians remains constant at all latitudes

Correct answer: B

20. If the current and wind are in the same direction, what does the sea surface represent concern the true wind speed?

- A. It appears at the correct speed
- B. It appears less than actually exists
- C. The appearance of the sea surface does not change
- D. It appears higher than actually exists

Correct answer: B

21. Discounting slip, if your vessel is turning RPM for 10 knots and making good a speed of 10 knots, which is TRUE of the current?

- A. It is with you at 2 knots
- B. It is slack
- C. It is with you at 10 knots
- D. It is against you at 10 knots

Correct answer: B

22. Which navigational mark may only be lettered?

- A. An unlighted, green, can buoy
- B. A port side day-shape
- C. A spherical buoy
- D. A red buoy

Correct answer: C

23. Plain language is usually used on marine weather _____.

- A. observations
- B. synoptic chart
- C. analyses
- D. forecasts

Correct answer: D

24. You are underway on course 106°T at a speed of 15.3 knots. You sight a buoy bearing 109°T at a radar range of 3.6 miles at 1725. If you change course at 1728, what is the course to steer to leave the buoy abeam to port at 0.5 mile?
- A. 100°T
 - B. 117°T
 - C. 120°T
 - D. 125°T

Correct answer: C

25. You are outbound in a channel marked by a range astern. The range line is 309°T . You are steering 127°T and have the range in sight as shown in illustration D047NG below. What action should you take?
- A. Come right to 129°T .
 - B. Come left until the range comes in line then alter course to 129°T .
 - C. Come right to close the range then when on the range steer 129°T .
 - D. Come left until the range comes in line then alter course to 125°T .

Correct answer: C

26. The range of tide is the _____.
- A. distance the tide moves out from the shore
 - B. difference between the heights of high and low tide
 - C. maximum depth of the water at high tide
 - D. duration of time between the high and low tide

Correct answer: B

27. Which is the region containing 3/4 of the mass of the atmosphere and to which are confined such phenomena as clouds, storms, precipitation and changing weather conditions?
- A. The troposphere
 - B. The tropopause
 - C. The stratosphere
 - D. The stratopause

Correct answer: A

28. If the gyrocompass error is east, what describes the error and the correction to be made to gyrocompass headings to obtain true headings?
- A. The readings are too high (large numerically) and the amount of the error must be added to the compass to obtain true
 - B. The readings are too low (small numerically) and the amount of the error must be added to the compass to obtain true
 - C. The readings are too high and the amount of the error must be subtracted from the compass to obtain true
 - D. The readings are too low and the amount of the error must be subtracted from the compass to obtain true

Correct answer: B

29. Which conditions should a vessel entering the eye of a hurricane expect?

- A. The barometer to reach the lowest point
- B. Moderating winds and heavy confused seas to strike his vessel from all directions
- C. The winds to increase to hurricane force and strike from a different direction as the eye passes
- D. All of the above

Correct answer: D

30. Which publication lists Class I and II private aids to navigation in or along navigable waters of the United States?

- A. List of Private Aids
- B. Aids to Navigation Manual
- C. Sailing Directions
- D. Light List

Correct answer: D

31. You wish to check the deviation of your standard magnetic compass. You find a natural range that you steer for and note that the gyrocompass heading is 034° , and the heading by standard magnetic compass is 026° . The gyro error is 1°W . Variation is 9°E . What is the deviation for that heading?

- A. 2°W
- B. 0°
- C. 2°E
- D. 9°E

Correct answer: A

32. Which term is used to describe the speed at which an ocean wave system advances?

- A. Group velocity
- B. Wavelength
- C. Wave velocity
- D. Ripple length

Correct answer: A

33. What do chart legends printed in capital letters indicate about the associated landmark?

- A. The landmark is inconspicuous
- B. The landmark is conspicuous
- C. It is a government facility or station
- D. The landmark has a radio transmitter

Correct answer: B

34. While on a course of 019°pgc , a light bears 14° on the port bow at a distance of 15.3 miles. What course should you steer to pass 1.5 miles abeam of the light, leaving it to port?

- A. 006°pgc
- B. 015°pgc
- C. 013°pgc
- D. 011°pgc

Correct answer: D

35. In regions near the poles, how are the winds generally described?

- A. Westerlies
- B. Southerlies
- C. Easterlies
- D. Northerlies

Correct answer: C

36. If you were sailing in the North Pacific and were interested in the ice and iceberg limits, where could you find this information?

- A. Pilot Chart
- B. Coast Pilot
- C. Notice to Mariners
- D. None of the above

Correct answer: A

37. Which daymark has no lateral significance?

- A. Green square
- B. Red triangle
- C. Square; top half green and bottom half red
- D. Black and white diamond

Correct answer: D

38. A daymark used as a special mark is indicated by which letter in illustration D045NG below?

- A. A
- B. B
- C. C
- D. D

Correct answer: B

39. The climate of the northern coast of the Gulf of America is _____.

- A. a warm marine type of climate
- B. an east coast marine type of climate
- C. variable from warm to subtropical
- D. humid and subtropical throughout the year

Correct answer: A

40. Which is TRUE of the dangerous semicircle of a hurricane in the Northern Hemisphere?

- A. It is the area of the storm that is to the right of the storm's track
- B. It is measured from true north clockwise to 180°T
- C. It is measured from true north counterclockwise to 180°T
- D. It is the area between the ship's heading and the bearing to the eye

Correct answer: A

41. What is the average speed of the movement of a hurricane following the recurvature of its track?
- A. 5 to 10 knots
 - B. Over 60 knots
 - C. 40 to 50 knots
 - D. 20 to 30 knots

Correct answer: D

42. You are on course $180^{\circ}T$ and take a relative bearing of a lighthouse of 225° . What is the true bearing of the lighthouse?
- A. 045°
 - B. 135°
 - C. 270°
 - D. 180°

Correct answer: A

43. What occurs when rising air cools to the dew point?
- A. Advection fog forms
 - B. Humidity decreases
 - C. Winds increase
 - D. Clouds form

Correct answer: D

44. The Brazil Current flows in which general direction?
- A. Northerly
 - B. Southeasterly
 - C. Southwesterly
 - D. Northwesterly

Correct answer: C

45. All of the following can be found on a Pilot Chart EXCEPT information concerning which item?
- A. Amounts of precipitation
 - B. Percentage of poor visibility conditions
 - C. Sea surface temperatures
 - D. Percentage of frequency of wave heights

Correct answer: A

46. You are enroute to assist vessel A. Vessel A is underway at 4.5 knots on course $233^{\circ}T$, and bears $264^{\circ}T$, 68 miles from you. What is the time to intercept if you make 13 knots?
- A. 6h 31m
 - B. 6h 47m
 - C. 7h 03m
 - D. 7h 37m

Correct answer: D

47. You are enroute from Puerto Rico to New York. A hurricane makes up and is approaching. What does it indicate if the wind veers steadily?
- A. The vessel is directly in the path of the storm
 - B. The vessel is in the dangerous semicircle
 - C. The vessel is in the storm center
 - D. The vessel is in the navigable semicircle

Correct answer: B

48. You are running parallel to the coast and plotting running fixes using bearings of the same object. You are making more speed than assumed for the running fix. In relation to the position indicated by the fix you will be _____.
- A. closer to the coast
 - B. farther from the coast
 - C. on the track line ahead of the fix
 - D. on the track line behind the fix

Correct answer: B

49. Chart information details to be used in ECDIS should be the latest edition of information originated by a government-authorized hydrographic office and conform to the standards of which organization?
- A. NASA
 - B. International Maritime Organization
 - C. US Coast Guard
 - D. International Hydrographic Organization

Correct answer: D

50. While navigating in fog off a coastline of steep cliffs, you hear the echo of the ships foghorn 2 1/2 seconds after the signal was sounded. What is the distance to the shore?
- A. 225 yards
 - B. 460 yards
 - C. 750 yards
 - D. 910 yards

Correct answer: B

51. How can the accuracy of an azimuth circle be checked?
- A. Sighting a terrestrial range in line and comparing the observed bearing against the charted bearing
 - B. Aligning the relative bearing markings so that 000° is on the lubber's line and the line of sight passes over the center of the compass
 - C. Ensuring that the alignment marks on the inner face of the circle are in line with those on the repeater on relative bearings of 000° and 090°
 - D. Comparing observed azimuths at different altitudes with computed values at the times of observation to see if the difference is constant

Correct answer: D

52. Which is a feature of a special daymark?

- A. A yellow diamond
- B. A green square
- C. A daymark with a yellow stripe on it
- D. A red-and-white octagon

Correct answer: A

53. Which is TRUE when a high-pressure system is centered north of your vessel in the Northern Hemisphere?

- A. The winds should be from the southwest at your position
- B. You should experience hot, moist, clear weather
- C. The wind direction is generally easterly
- D. The winds should be brisk

Correct answer: C

54. You desire to make good a true course of 157° . The variation is 15°E , magnetic compass deviation is 9°W , and gyrocompass error is 3°E . A southwesterly wind produces a 2° leeway. What is the course to steer per standard magnetic compass to make the true course good?

- A. 145°psc
- B. 147°psc
- C. 150°psc
- D. 153°psc

Correct answer: D

55. A line of position from a celestial observation is a segment of which choice?

- A. A parallel of declination
- B. A parallel of altitude
- C. A vertical circle
- D. A circle of equal altitude

Correct answer: D

56. In which months will the North Equatorial Countercurrent be strongest?

- A. October and November
- B. April and May
- C. July and August
- D. January and February

Correct answer: C

57. How can you follow the approach of a dangerous cyclonic storm?

- A. Utilizing the National Weather Service Observing Handbook No.1, Marine Surface Observations
- B. Review the Coast Pilot or Sailing Directions
- C. By monitoring the change in the sea temperature
- D. By a newspaper, a weather map, a weather fax, or a weather forecast

Correct answer: D

58. Which radar control shortens all echoes on the display and reduces clutter caused by rain or snow?

- A. The receiver gain control
- B. The brilliance control
- C. The fast time constant (differentiator)
- D. The sensitivity time control (sea clutter control)

Correct answer: C

59. Sometimes foreign charts are reproduced by NGA. On such a chart a wire dragged (swept) area may be shown in purple or which other color?

- A. Green
- B. Magenta
- C. Yellow
- D. Red

Correct answer: A

60. A siphon cell is a part of which instrument?

- A. A maximum thermometer
- B. A thermograph
- C. A hygrometer
- D. A barograph

Correct answer: D

61. Which of the following compensates for errors introduced when a vessel heels over?

- A. The Flinders bar
- B. A single vertical magnet beneath the compass
- C. The soft iron spheres on the arms of the binnacle
- D. Magnets placed in trays inside the binnacle

Correct answer: B

62. What weather change accompanies the passage of a cold front in the Northern Hemisphere?

- A. Steady dropping of barometric pressure
- B. Wind shift from northeast clockwise to southwest
- C. A line of cumulonimbus clouds
- D. Steady precipitation, gradually increasing in intensity

Correct answer: C

63. Which type of precipitation occurs only in thunderstorms with strong convection currents that convey raindrops above and below the freezing level?

- A. Hail
- B. Freezing rain
- C. Sleet
- D. Rime

Correct answer: A

64. Which of the listed properties does warm air possess?

- A. Moisture in warm air condenses as the air is heated
- B. It rises above cooler air and cools as it rises
- C. Atmospheric pressure rises as warm air rises
- D. Warm air that has cooled will develop low pressure areas

Correct answer: B

65. Fog forms when which condition exists?

- A. When the air is 90% water saturated
- B. When the air is 50% water saturated
- C. When the air temperature is equal to, or below the dew point temperature
- D. When the air temperature is greater than the dew point temperature

Correct answer: C

66. You are enroute to assist vessel A. Vessel A is underway at 5.5 knots on course 033°T, and bears 284°T at 43 miles from you. What is the course to steer and running time at 16 knots to intercept vessel A?

- A. 265°, 3h 13m
- B. 303°, 3h 13m
- C. 265°, 2h 32m
- D. 303°, 2h 32m

Correct answer: D

67. When changing from a compass course to a true course, which should you apply?

- A. Variation only
- B. A correction for the direction of current set
- C. Deviation only
- D. Both variation and deviation

Correct answer: D

68. Two navigational hazards are located near to each other, but each is marked by an individual cardinal buoyage system. How are the buoys of one cardinal system identified from the other system?

- A. The difference in the periods of the light
- B. The differing light colors
- C. One system using horizontal bands while the other system uses vertical stripes
- D. One system having odd numbers while the other system has even numbers

Correct answer: A

69. Which publication indicates the HYDROLANTS or HYDROPACS issued since the previous working day?

- A. Daily Memorandum
- B. Broadcast Notice to Mariners
- C. Summary of Corrections
- D. Local Notice to Mariners

Correct answer: A

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Illustrations: 3

70. You swung ship and compared the magnetic compass against the gyrocompass to find deviation. Gyro error is 2°W. The variation is 8°W. Find the deviation on a gyro heading of 058°.

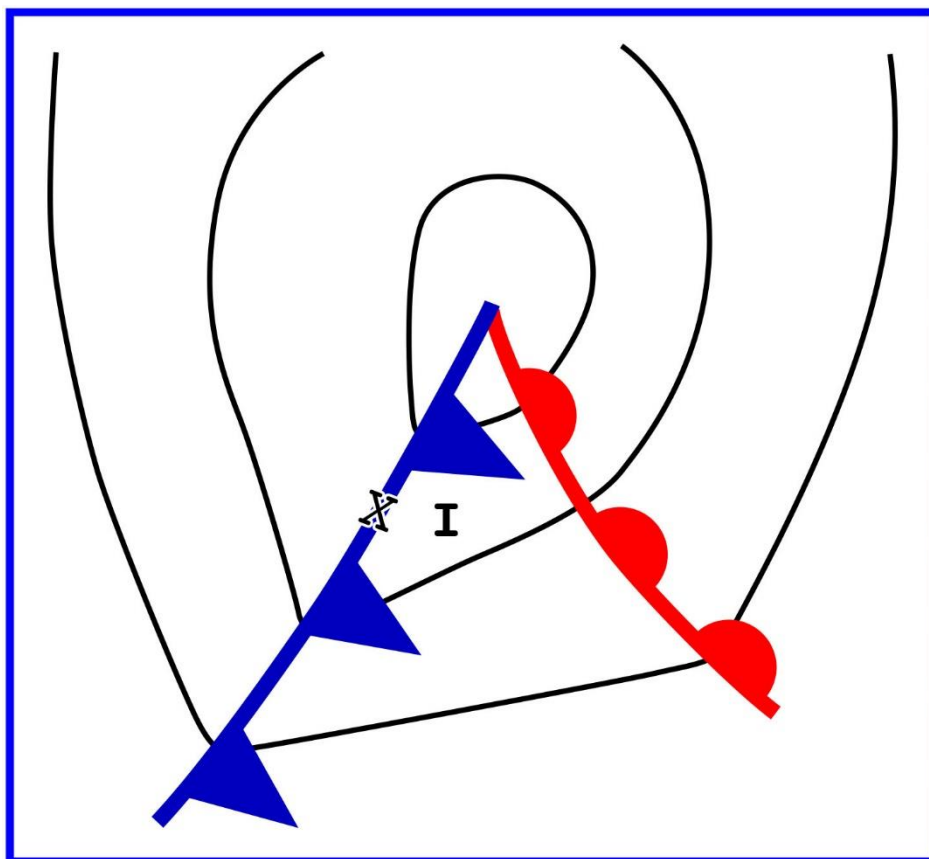
NP-0119

HEADING	
PSC	PGC
030.5°	024°
061.5°	054°
092.0°	084°
122.5°	114°
152.0°	144°
181.0°	174°
210.0°	204°
239.5°	234°
269.0°	264°
298.0°	294°
327.5°	324°
358.5°	354°

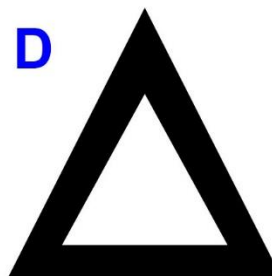
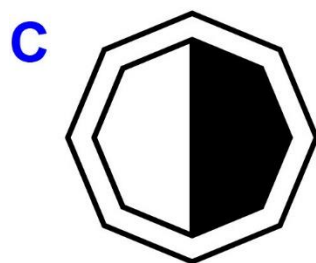
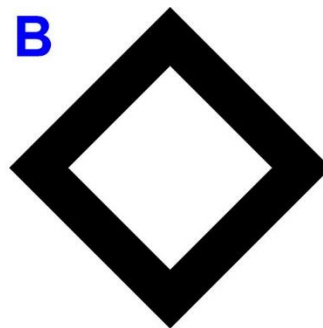
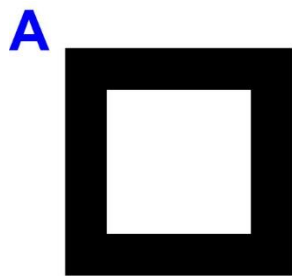
- A. 1.5°W
- B. 1.0°W
- C. 1.0°E
- D. 0.5°W

Correct answer: A

D013NG



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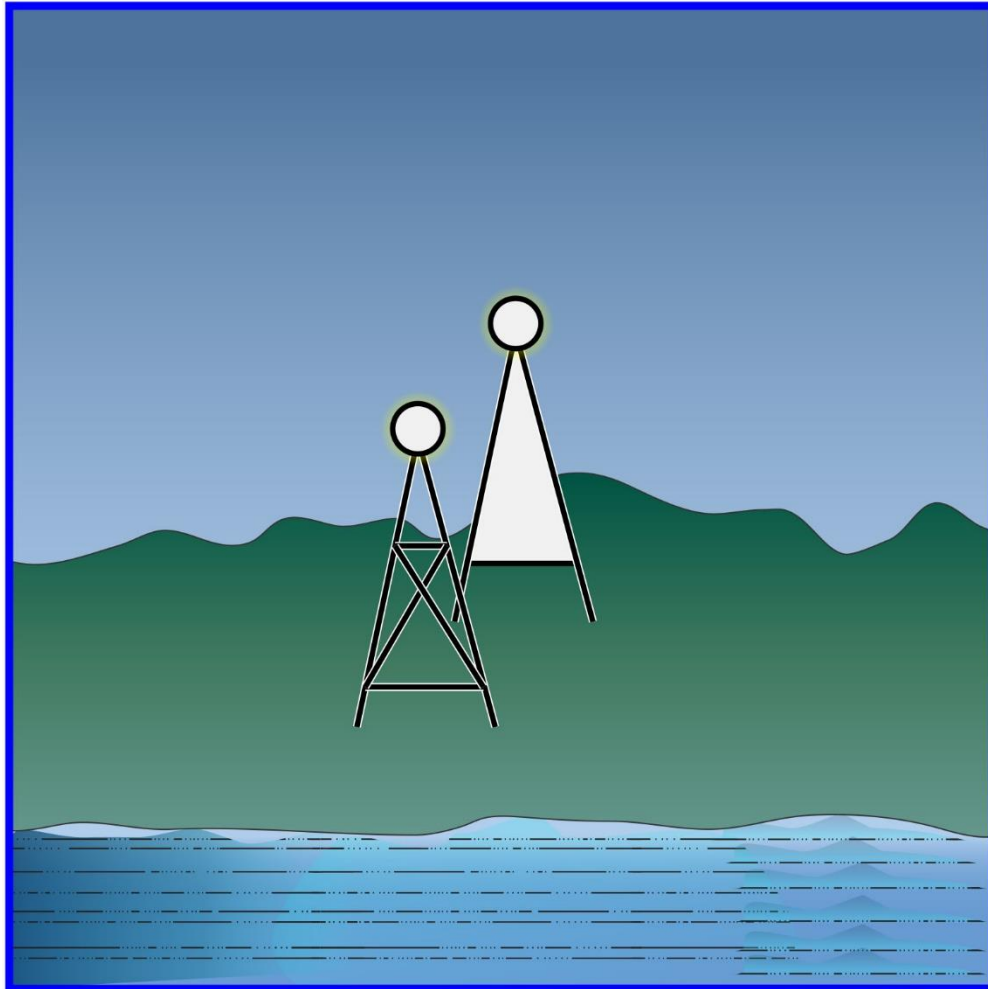


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