

U.S.C.G. Merchant Marine Exam  
Mate Uninspected Fishing Vessels  
Q194 Navigation Problems – Oceans  
(Sample Examination)

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

1. On 14 January your 0746 zone time DR position is LAT 26°37.0'N, LONG 153°19.0'W.

At that time, you observe the Sun bearing 123°psc.

The chronometer reads 05h 49m 16s, and the chronometer error is 02m 29s fast.

The variation is 3°W.

What is the deviation of the standard magnetic compass?

- A. 1.4°W
- B. 1.6°E
- C. 3.4°E
- D. 4.4°W

Correct answer: A

2. On 21 November at 2100 zone time, you depart LAT 32°12.0'N, LONG 69°26.0'W enroute to LAT 12°05.0'N, LONG 7°32.0'W. The distance is 3,519 miles, and the average speed will be 12.5 knots. What is the zone time of arrival?

- A. 1330, 3 December
- B. 1530, 3 December
- C. 1830, 3 December
- D. 1530, 4 December

Correct answer: C

3. On 15 November your 0813 zone time (ZT) fix gives you a position of LAT 22°30.0'N, LONG 67°28.0'W. Your vessel is on course 164°T, and your speed is 13.5 knots. Local apparent noon (LAN) occurs at 1215 ZT, at which time a meridian altitude of the Sun's lower limb is observed. The observed altitude (Ho) for this sight is 49°46.0'. What is the latitude at 1200 ZT?

- A. 21°42.5'N
- B. 21°39.3'N
- C. 21°36.0'N
- D. 21°32.8'N

Correct answer: A

4. On 25 December your 0330 ZT DR position is LAT 25°15.0'N, LONG 32°16.0'W. You are on course 145°T at a speed of 20 knots. What will be the zone time of sunrise at your vessel?

- A. 0623
- B. 0635
- C. 0641
- D. 0647

Correct answer: D

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5. On 12 March your 1846 zone time DR position is LONG  $129^{\circ}16.5'W$ . At that time you observe Polaris with a sextant altitude (hs) of  $28^{\circ}01.5'$ . The chronometer time of the sight is 03h 44m 10s, and the chronometer error is 01m 55s slow. The index error is 2.2' off the arc, and the height of eye is 59.8 feet (18.2 m). What is your latitude by Polaris?
- A.  $27^{\circ}33.7'N$
  - B.  $27^{\circ}40.9'N$
  - C.  $27^{\circ}54.4'N$
  - D.  $28^{\circ}06.9'N$

Correct answer: A

6. On 15 July in DR position LAT  $22^{\circ}19.0'N$ , LONG  $154^{\circ}37.0'W$ , you observe an amplitude of the Sun. The Sun's center is on the visible horizon and bears  $298^{\circ}psc$ . The chronometer reads 04h 45m 19s and is 01m 56s slow. Variation in the area is  $7.5^{\circ}W$ . What is the deviation of the standard magnetic compass?
- A.  $2.7^{\circ}W$
  - B.  $3.0^{\circ}E$
  - C.  $3.6^{\circ}W$
  - D.  $3.9^{\circ}E$

Correct answer: B

7. On 7 November your 0830 zone time position was LAT  $27^{\circ}36.0'N$ , LONG  $162^{\circ}19.0'W$ . Your vessel was steaming on course  $289^{\circ}T$  at a speed of 19.0 knots. An observation of the Sun's lower limb was made at 0945 ZT. The chronometer read 08h 43m 11s and was slow 01m 51s. The observed altitude (Ho) was  $38^{\circ}21.1'$ . Local Apparent Noon (LAN) occurred at 1138 zone time. The observed altitude (Ho) was  $45^{\circ}35.0'$ . What was the longitude of your 1200 zone time running fix?
- A.  $163^{\circ}38.8'W$
  - B.  $163^{\circ}34.0'W$
  - C.  $163^{\circ}30.2'W$
  - D.  $163^{\circ}26.0'W$

Correct answer: A

8. On 20 June your 0800 zone time DR position is LAT  $21^{\circ}02.0'N$ , LONG  $152^{\circ}50.0'E$ . Your vessel is on course  $265^{\circ}T$  at a speed of 15.0 knots. What is the zone time of local apparent noon (LAN)?
- A. 1149
  - B. 1154
  - C. 1159
  - D. 1203

Correct answer: B

9. A vessel at LAT  $14^{\circ}10'N$ , LONG  $61^{\circ}00'W$  is to proceed to LAT  $10^{\circ}00'N$ , LONG  $53^{\circ}23'W$ . What is the course and distance by mid-latitude sailing?
- A.  $117.3^{\circ}T$ , 503.0 miles
  - B.  $118.6^{\circ}T$ , 508.0 miles
  - C.  $119.2^{\circ}T$ , 512.0 miles
  - D.  $117.9^{\circ}T$ , 504.0 miles

Correct answer: C

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10. The great circle distance from LAT  $24^{\circ}25.3'N$ , LONG  $83^{\circ}02.6'W$  to LAT  $35^{\circ}57.2'N$ , LONG  $5^{\circ}45.7'W$  is 3966.5 miles. Determine the latitude of the vertex.
- A.  $38^{\circ}46.2'N$
  - B.  $38^{\circ}16.4'N$
  - C.  $38^{\circ}09.4'N$
  - D.  $37^{\circ}57.3'N$

Correct answer: C