

**Demo PDF file. This file includes questions: 10 from 531. Full version of file looks the same as demo, but full version includes all questions. You may download file with all questions by link on bottom of this page**

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## **Q142 - Navigation Problems: Oceans**

**1. You desire to make good a true course of 132°. The variation is 10°W, magnetic compass deviation is 5°E, and gyrocompass error is 5°W. A northeast by east wind produces a 5° leeway. What is the course to steer per standard magnetic compass to make the true course good?**

- 135°psc
- **132°psc**
- 137°psc
- 142°psc

Note:

*To achieve a true course of 132, correct for leeway, then apply variation (add West) and deviation (subtract East) to determine the standard magnetic compass course, resulting in 132psc.*

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**2. You are steering 143°T, and a light is picked up dead ahead at a distance of 18.2 miles at 2006. You change course to pass the light 5.5 miles off abeam to port. If you are making 14.5 knots, what is your ETA at a position 5.5 miles off the light?**

- 2115
- **2118**
- 2121
- 2124

Note:

*The distance from the initial sighting to 5.5 miles abeam is calculated using the Pythagorean theorem, resulting in a run of approximately 17.34 nautical miles. This distance, at a speed of 14.5 knots, takes about 1 hour and 12 minutes. Adding this time to the initial time of 2006 yields an ETA of 2118.*

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**3. The true course between two points is 312°. Your gyrocompass has an error of 3°W. You make an allowance of 4° leeway for a west by south wind. What gyro course should be steered to make the true course good?**

- 315°pgc
- 305°pgc
- 318°pgc
- **311°pgc**

Note:

*To achieve a true course of 312, a gyrocompass with a 3W error requires a steering correction for leeway (4) and gyro error, resulting in a gyro course of 311.*

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**4. You are underway on course 315°T at 14 knots. The current is 135°T at 1.9 knots. What is the speed being made good?**

- **12.1 knots**
- 13.5 knots
- 14.0 knots
- 15.9 knots

Note:

*The current opposes the vessel's course, reducing the speed made good by subtracting the current's speed from the vessel's speed: 14.0 knots - 1.9 knots = 12.1 knots.*

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**5. Your vessel is on a course of 221°T at 15 knots. At 0319 a light bears 198.5°T, and at 0353 the light bears 176°T. At what time and distance off will your vessel be when abeam of the light?**

- **0417, 6.0 miles**
- 0410, 5.2 miles
- 0407, 4.3 miles
- 0427, 7.4 miles

Note:

*Trigonometry applied to the changing relative bearings and the vessel's speed indicates the vessel will be abeam of the light at 0417, approximately 6 nautical miles off.*

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**6. Your vessel is on a course of 358°T at 19 knots. At 0316 a light bears 024.5°T, and at 0334 the light bears 043°T. At what time and at what distance off will your vessel be when abeam of the light?**

- 0355, 6.2 miles
- **0352, 5.7 miles**
- 0359, 7.1 miles
- 0403, 8.0 miles

Note:

*The vessel will be abeam of the light at 0352, approximately 5.7 nautical miles off, determined by analyzing the change in relative bearing and the vessel's constant speed and course.*

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**7. Your 0000 zone time position on 13 June is LAT 24° 35' N, LONG 142° 26' E. Your vessel is on course 245° T, speed is 13.5 knots. What is the zone time of sunrise?**

- Time 0440
- **Time 0445**
- Time 0503
- Time 0528

Note:

*After converting the Nautical Almanac's sunrise time to zone time using the ship's longitude and zone description, the correct sunrise time is 0445 ZT.*

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**8. At 0100 zone time on 23 September your DR position is LAT 24°25.0'N, LONG 83°00.0'W. You are steering course 315°T. The speed over the ground is 10.0 knots. You observed 3 morning sun lines. Determine the latitude and longitude of your 1100 running fix. ZONE OBSERVED TIME GHA ALTITUDE(Ho) DECLINATION ----- 0700 17°20.1' 21°09.0' S 00°09.7' 0900 47°03.0' 46°05.0' S 00°11.6' 1100 77°06.4' 63°16.1' S 00°13.5'**

- **LAT 25°35.3'N, LONG 84°17.0'W**
- LAT 25°42.6'N, LONG 84°18.7'W
- LAT 25°30.4'N, LONG 84°28.6'W
- LAT 25°28.3'N, LONG 84°34.3'W

Note:

*The correct answer is LAT 2535.3'N, LONG 8417.0'W. This position results from advancing the DR and plotting the intersection of the three morning Sun LOPs to 1100.*

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**9. At 0327 ZT on 29 May, your DR position is LAT 25° 00' N, LONG 64° 15' W. You are steering 270° T at a speed of 13.6 knots. What is the zone time of sunrise?**

- Time 0521
- **Time 0529**
- Time 0536
- Time 0548

Note:

*Using the Nautical Almanac for sunrise at the given latitude and longitude, correcting for the ship's westward run and time zone, results in a sunrise zone time of approximately 0529.*

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**10. At 0400 zone time on 24 June, your DR position is LAT 23° 10.0' N, LONG 085° 33' W. You are steering 295° T at a speed of 10.0 knots. What is the zone time of sunrise?**

- Time 0452
- **Time 0458**
- Time 0504
- Time 0510

Note:

*Sunrise occurs at 0458 zone time. This was determined by finding the local mean time of sunrise from the Nautical Almanac for the given latitude, then correcting for the longitude difference from the time zone meridian. The ship is east of the meridian, requiring a subtraction of 18 minutes from the local mean time to obtain the zone time.*

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