

Nautical Navigation: Pre-Test

There are three sections: Multiple Choice, True/False, and Short Answer. For the multiple choice, please select the BEST answer from the options provided. If you have any questions, please raise your hand and I will do my best to clarify.

1. What are the Three Norths?
 - a. True North, Map North, Magnetic North
 - b. True North, Grid North, Magnetic North
 - c. Northeast, Northwest, North
 - d. Magnetic North, Polar North, Arctic North

2. What is the difference between a chart and a map?
 - a. A chart shows the different elevations whereas a map doesn't
 - b. A chart is based on the water and a map is based on land
 - c. They are essentially the same thing
 - d. A map contains more detail than a chart

3. A compass points to which north?
 - a. True North
 - b. Grid North
 - c. Magnetic North
 - d. Seismic North

4. How many satellites does a GPS need to use in order to determine an exact location?
 - a. 1
 - b. 2
 - c. 3
 - d. 4

5. A GPS orients to which north (unless programmed otherwise)?
 - a. True North
 - b. Grid North
 - c. Magnetic North
 - d. Seismic North

6. Where can you find Magnetic north on a compass rose?
 - a. The inner compass rose
 - b. The outer compass rose
 - c. The compass rose located furthest north on the chart
 - d. The compass rose located furthest south on the chart

7. All of these are parts of a compass EXCEPT _____.
 - a. The needle
 - b. The doghouse
 - c. The rotating bezel
 - d. The trough

8. These lines on a map or chart run North to South
 - a. Latitude
 - b. Longitude
 - c. Poles
 - d. Parallels

9. These lines on a map or chart run East to West
 - a. Latitude
 - b. Longitude
 - c. Poles
 - d. Borders

10. How many visual points on a map or chart do you need in order to to get an accurate location of where you are (Hint: triangulation)
 - a. 1
 - b. 2
 - c. 3
 - d. 4

11. How can you tell if your boat is on a collision course?
 - a. It will have a decreasing range from another boat, and a generally steady bearing to that boat
 - b. It will have a decreasing range from another boat, and a greatly changing bearing to that boat
 - c. It will have generally steady bearing with an increasing range
 - d. It will have generally changing bearing with a steady rang

12. Which device will NOT provide navigation information?
 - a. VHF
 - b. RADAR
 - c. GPS
 - d. SONAR

13. The correct definition of a bearing is:
- The estimation of a location
 - The direction from an object toward the observer
 - The direction toward an object from the observer
 - A line along which the observer is located
14. A buoy with characteristics **R “4” Fl R 2s** means:
- Red number 4 buoy with 2 flickering lights
 - Rip current on the bottom of a buoy all 4 seasons
 - Red number 4 buoy flashing a red light every 2 seconds
 - Red number 4 buoy with a red flag and a bell every 2 seconds
15. Which of the following can you use to measure distance on a map or chart?
- Latitude
 - Longitude
 - Borders
 - Compass Rose
16. Shallow water is generally marked with what type of shading on a chart?
- White
 - Light Blue
 - Dark Blue
 - Green
17. What is a fix?
- An accurately determined located position
 - A line along which the observer is located
 - The line on a compass that points north
 - The line on a compass that determines where you are
18. How many feet are in a yard?
- 1
 - 2
 - 3
 - 4
19. How many feet are in a fathom?
- 2
 - 4
 - 6
 - 8

20. What type of signal does GPS use to communicate with a GPS receiver?
- Digital
 - Radio
 - Morse Code
 - Infrared
21. Who controls and maintains the GPS system?
- NASA
 - Department of Defense
 - US Navy
 - Joint Chiefs of Staff
22. What is the best description of Dead Reckoning?
- An approximate location of a ship's position and a plotted course based on the speed and bearing of the ship
 - An exact line from a ship's speed
 - A shipwreck caused by poor navigation
 - An exact location of a ship's position based on multiple bearings
23. What word describes the difference between Magnetic and True meridians?
- Compass Change
 - Deviation
 - Variation
 - Variable Change
24. What are "soundings"?
- Measurement of the depth of the water
 - Measurement of the quality of the water
 - Aids to navigation that you can hear
 - The current from an outgoing tide
25. When measuring set and drift, the set refers to the _____ of the flow of water:
- Speed
 - Salinity
 - Direction
 - Draft

26. What is the magnetic bearing?

True Bearing: **115 °**

Variation: **5 ° W**

- a. 110°
- b. 120°
- c. 185°
- d. 115°

27. What is the magnetic bearing?

True Bearing: **096 °**

Variation: **5 ° E**

- a. 091°
- b. 105°
- c. 101°
- d. 096°

28. What is the true bearing?

Magnetic Bearing: **210 °**

Variation: **10 ° W**

- a. 195°
- b. 200°
- c. 210°
- d. 220°

True/False

1. Distance = Speed x Time

2. A contour line measures the elevation on a map or depth of water on a chart.

3. Contour lines can cross each other.

4. Contour lines on a chart will be close together to show deep water.

5. GPS satellites are a primary form of navigation.

6. A chart and a map are the exact same thing.

7. You should never rely on a single aid to navigation to determine your position.

8. The magnetic north pole is reliable because it is stationary.

9. A compass divider is used to measure BOTH angles as well as distance.

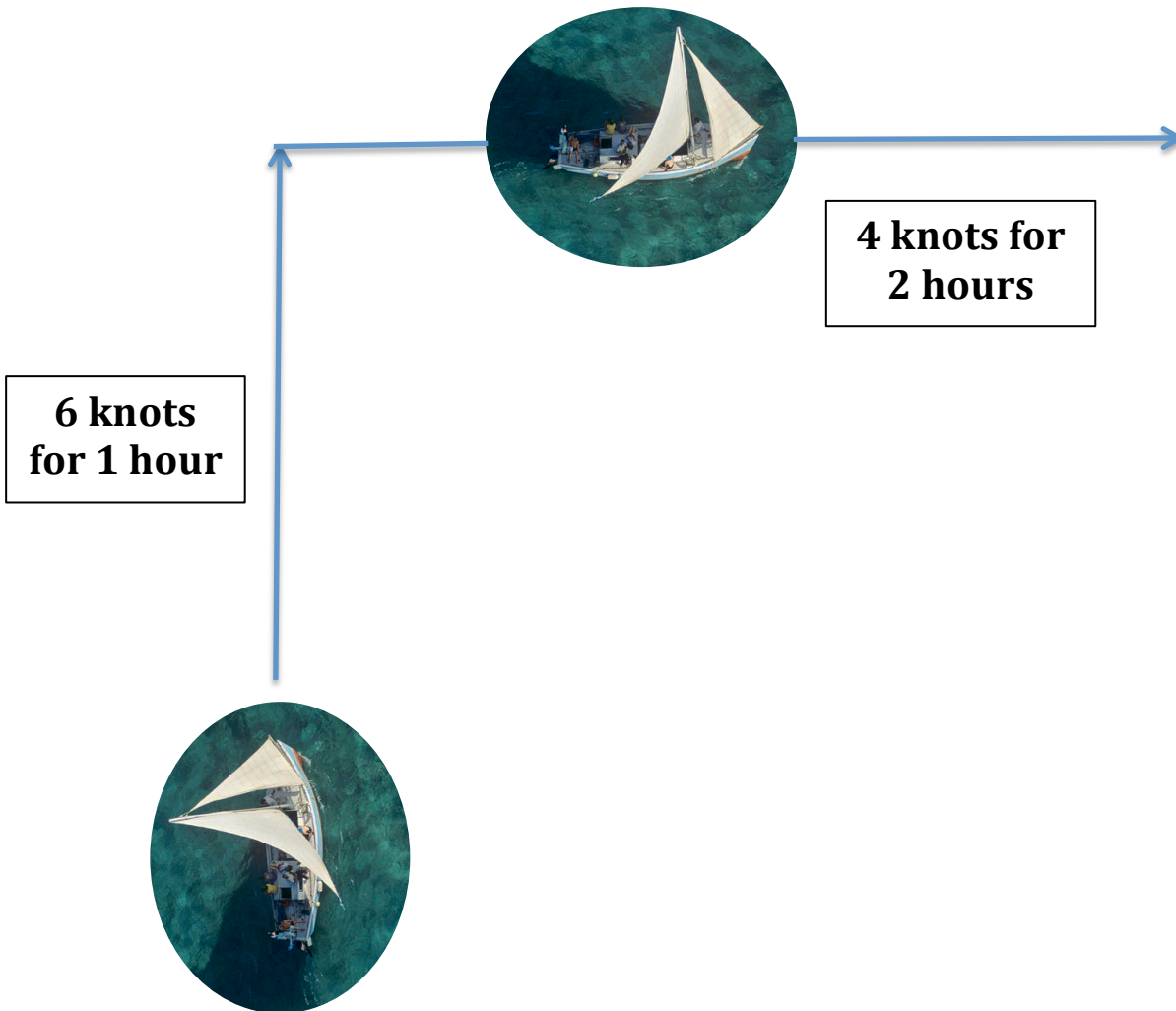
10. [Magnetic Bearing] = [True Bearing] + [Variation]

Short Answer

1. How many *minutes* are in the following Latitude? **38° 45' 15"**

2. How many *seconds* are in the following Latitude? **39° 30' 45"**

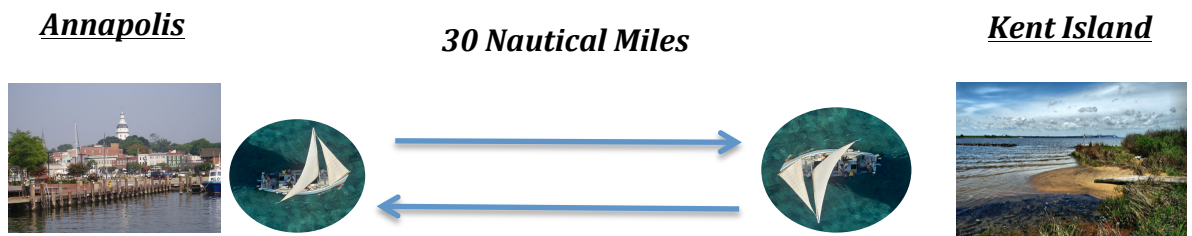
7. *Bull* set sail heading north at a speed of 6 knots. After 1 hour she turns east and sails at a speed of 4 knots for 2 hours.



- (1) How many total miles has *Bull* sailed in 3 hours?
- (2) How far is *Bull* from her original location?

8. The sailboat *Bull* sets sail from Annapolis bound for Kent Island, 30 miles away. She sails the most direct route and sails a speed of 10 knots.

The sailboat *Bear* sets sail from Kent Island bound for Annapolis (30 miles away). She too sails the most direct route and sails at a speed of 6 knots.



(1) How many hours before *Bull* reaches Kent Island?

(2) How many hours before *Bear* to reach Annapolis?