

U.S.C.G. Merchant Marine Exam
Apprentice Mate Steersman
Q413 Navigation General - Oceans
(Sample Examination)

Choose the best answer to the following Multiple Choice Questions.

1. A navigator fixing a vessel's position by radar _____.
- (A) should never use radar bearings
 - (B) must use information from targets forward of the beam
 - (C) can use radar information from one object to fix the position
 - (D) should only use radar bearings when the range exceeds the distance to the horizon

If choice C is selected set score to 1.

2. You are in a channel inbound from sea. A daymark used to mark a channel junction when the preferred channel is to starboard will have the shape indicated by what letter in illustration D045NG below?
- (A) A
 - (B) B
 - (C) C
 - (D) D

If choice A is selected set score to 1.

3. Your vessel is participating in the Voluntary Observing Ship Program, you are preparing WS Form B-80 as seen in illustration D041NG below. The dry bulb thermometer reads 54°F and the wet bulb thermometer reads 50°F. How would you encode the air temperature groups in the report?
- (A) 10122, 2008/
 - (B) 054//, 047//
 - (C) 1054/, 2050/
 - (D) 1054/, 2047/

If choice A is selected set score to 1.

4. Your vessel is participating in the Voluntary Observing Ship Program, you are preparing WS Form B-80 as seen in illustration D041NG below. The dry bulb thermometer reads 78°F and the wet bulb thermometer reads 75°F. How would you encode the air temperature groups in the report?
- (A) 10256, 2074/
 - (B) 10256, 2023/
 - (C) 00256, 0023/
 - (D) 10780, 2074/

If choice B is selected set score to 1.

5. In the Northern Hemisphere, the right half of the storm is known as the dangerous semicircle. Which statement(s) is/are TRUE?
- (A) The direction of the wind and seas might carry a vessel into the path of the storm
 - (B) The wind speed is greater here since the wind is traveling in the same general direction as the storm's track
 - (C) The seas are higher because of greater wind speed
 - (D) All of the above

If choice D is selected set score to 1.

6. While steering a course of 150°T, you wish to observe the Sun for a speed check. What would the azimuth have to be?
- (A) 060°T
 - (B) 090°T
 - (C) 150°T
 - (D) 240°T

If choice C is selected set score to 1.

7. It is unlawful to approach within how many yards of a northern right whale?
- (A) 200
 - (B) 300
 - (C) 400
 - (D) 500

If choice D is selected set score to 1.

8. Your chart indicates that there is an isolated rock and names the rock using vertical letters. What does this indicate?
- (A) The exact position of the rock is doubtful
 - (B) The rock is a hazard to deep draft vessels only
 - (C) The rock is visible at low water springs only
 - (D) The rock is a small islet

If choice D is selected set score to 1.

9. If your weather bulletin shows the center of a low pressure area to be 100 miles due east of your position, what winds can you expect in the Northern Hemisphere?
- (A) North to northwest
 - (B) South to southeast
 - (C) East to southeast
 - (D) East to northeast

If choice A is selected set score to 1.

10. Radar makes the most accurate determination of the _____.

- (A) shape of a target
- (B) distance to a target
- (C) size of a target
- (D) direction of a target

If choice B is selected set score to 1.

11. A vessel crossing a river on the Western Rivers, must keep out of the way of which power-driven vessel?

- (A) A power-driven vessel ascending the river without a tow
- (B) A power-driven vessel descending the river with a tow
- (C) A power-driven vessel ascending the river with a tow
- (D) All of the above

If choice D is selected set score to 1.

12. Under the IALA-A Buoyage System, when entering from seaward which buoy as shown in illustration D046NG below, should be left to starboard?

- (A) A
- (B) B
- (C) C
- (D) D

If choice C is selected set score to 1.

13. By convention, what color are the south seeking ends of a compass' magnet?

- (A) Blue
- (B) Red
- (C) White
- (D) Black

If choice A is selected set score to 1.

14. Green lights may appear on which buoys?

- (A) Horizontally banded buoys
- (B) Vertically striped buoys
- (C) Spherical buoys
- (D) Yellow buoys

If choice A is selected set score to 1.

15. What causes variation in a compass?

- (A) Lack of oil in the compass bearings
- (B) Worn gears in the compass housing
- (C) Magnetism from the earth's magnetic field
- (D) Magnetism within the vessel

If choice C is selected set score to 1.

16. You are outbound in a channel marked by a range astern. The range line is 133°T . You are steering 315°T and have the range in sight as shown in illustration D048NG below. What action should you take?

- (A) Come left to close the range then when on the range steer 313°T .
- (B) Come left to 313°T .
- (C) Come right until the range comes in line then alter course to 317°T .
- (D) Come right until the range comes in line then alter course to 313°T .

If choice A is selected set score to 1.

17. You are enroute to assist vessel A. Vessel A is underway at 5.5 knots on course 033°T , and bears 248°T at 64 miles from you. What is the time to intercept if you make 13 knots?

- (A) 4h 55m
- (B) 3h 44m
- (C) 4h 36m
- (D) 3h 59m

If choice B is selected set score to 1.

18. Your radar displays your ship off center. As you proceed on your course, your ship's marker moves on the PPI scope while echoes from land masses remain stationary. What is this display called?

- (A) Off center
- (B) True motion
- (C) Head up
- (D) Stabilized

If choice B is selected set score to 1.

19. Which is the cause of tropic tides?

- (A) Sun and Moon both being near 0° declination
- (B) Moon being at perigee
- (C) Moon crossing the equator
- (D) Moon being at its maximum declination

If choice D is selected set score to 1.

20. In illustration D044NG below, what type of buoy is indicated by the letter A?

- (A) Can
- (B) Nun
- (C) Pillar
- (D) Spar

If choice A is selected set score to 1.

21. Which navigational mark may only be lettered?

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

If choice D is selected set score to 1.

22. Information about the direction and velocity of rotary tidal currents can be found in which publication?

- (A) Nautical Almanac
- (B) Tidal Current Tables
- (C) Mariner's Guide
- (D) Tide Tables

If choice B is selected set score to 1.

23. The light characteristic of flashing is used in the Aids to Navigation System on the Western Rivers. Which example is required to utilize this characteristic?

- (A) Lights marking the right descending bank
- (B) Preferred channel buoys
- (C) Lights marking the left descending bank
- (D) Daymarks with no lateral significance

If choice A is selected set score to 1.

24. As you enter a U.S. channel from seaward, which is TRUE concerning the numbers on the buoys?

- (A) increase in channels going to the north or west, and decrease in channels going to the south or east
- (B) increase with the can buoys being odd numbered
- (C) increase with the can buoys being even numbered
- (D) decrease with the can buoys being even numbered

If choice B is selected set score to 1.

25. A sailing chart could have which scale?

- (A) Less than 1:25,000
- (B) 1:35,000
- (C) 1:100,000
- (D) 1:700,000

If choice D is selected set score to 1.

26. In illustration D039NG below, what type of cloud is indicated by the number five?

- (A) Nimbostratus
- (B) Cirrocumulus
- (C) Cirrostratus
- (D) Altocumulus

If choice D is selected set score to 1.

27. Which feature, when set to zero, might allow a GPS unit to have an accuracy equivalent to Precise Positioning Service receiver capability?

- (A) Auto-correlation
- (B) Transit
- (C) Anti-spoofing
- (D) Selective Availability

If choice D is selected set score to 1.

28. While navigating in fog off a coastline of steep cliffs, you hear the echo of the ship's foghorn 4 1/2 seconds after the signal was sounded. What is the distance to the shore?

- (A) 405 yards
- (B) 628 yards
- (C) 730 yards
- (D) 825 yards

If choice D is selected set score to 1.

29. If you are caught in the left semicircle of a tropical storm, in the Southern Hemisphere, which action should you take?

- (A) Place the wind dead ahead and heave to
- (B) Place the wind on the port bow, and make as much way as possible
- (C) Place the wind 2 points on the port quarter, and make as much way as possible
- (D) Place the wind on the starboard quarter, hold course and make as much way as possible

If choice B is selected set score to 1.

30. What will a buoy marking a wreck show?

- (A) A white light FL (2) and a topmark of 2 black spheres
- (B) An occulting green light and may be lettered
- (C) A yellow light and will be numbered
- (D) A continuous quick white light and may be numbered

If choice A is selected set score to 1.

31. Which time meridian is used for tide computations in New York Harbor?

- (A) 75°00'W
- (B) 82°30'W
- (C) 52°30'W
- (D) 60°00'W

If choice A is selected set score to 1.

32. Information about the pilotage available at Miami harbor may best be obtained from which publication?

- (A) World Port Index
- (B) Sailing Directions
- (C) United States Coast Pilot
- (D) Pilot Chart

If choice C is selected set score to 1.

33. Which wind pattern has the most influence over the movement of frontal weather systems over the North American continent?

- (A) Prevailing westerlies
- (B) Subpolar easterlies
- (C) Dominant southwesterly flow
- (D) Northeast trades

If choice A is selected set score to 1.

34. In the IALA Maritime Buoyage System, what is a red and white vertically-striped buoy used to indicate?

- (A) Isolated danger
- (B) A special mark not primarily used for navigation
- (C) Preferred channel
- (D) Safe water

If choice D is selected set score to 1.

35. On the pole side of the high pressure belt in each hemisphere, the pressure diminishes. The winds along these gradients are diverted by the Earth's rotation toward the east. What is the name of these winds?

- (A) The prevailing westerlies
- (B) The northeast trade winds
- (C) The geostrophic winds
- (D) The southeast trades

If choice A is selected set score to 1.

36. The LMT of LAN is 1210. Your longitude is 70°30'E. Which time would you use to enter the Nautical Almanac to determine the declination of the Sun at LAN?

- (A) 1842
- (B) 1652
- (C) 0728
- (D) 0652

If choice C is selected set score to 1.

37. A line on the Earth parallel to the equator is a _____.

- (A) gnomonic curve
- (B) meridian
- (C) small circle
- (D) great circle

If choice C is selected set score to 1.

38. Yesterday your chronometer read 03h 01m 56s at the 1500 GMT time tick. Today your chronometer read 03h 01m 54s at the 1500 GMT time tick. What is the chronometer rate?

- (A) 2s fast
- (B) -2s
- (C) +2s
- (D) 1m 54s fast

If choice B is selected set score to 1.

39. How can the accuracy of an azimuth circle be checked?

- (A) 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°
- (B) sighting a terrestrial range in line and comparing the observed bearing against the charted bearing
- (C) comparing observed azimuths at different altitudes with computed values at the times of observation to see if the difference is constant
- (D) 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

If choice C is selected set score to 1.

40. What does the numeral in the center of a wind rose circle on a pilot chart indicate?

- (A) The average wind force on the Beaufort scale
- (B) The total number of observations
- (C) The percentage of calms
- (D) The average wind force in knots

If choice C is selected set score to 1.

41. What is the reaction of a gyrocompass to an applied force known as?

- (A) Gravity effect
- (B) Gyroscopic inertia
- (C) Earth rate
- (D) Precession

If choice D is selected set score to 1.

42. Yesterday your chronometer read 02h 59m 58s at the 1500 GMT time tick. Today the chronometer reads 03h 00m 02s at the 1500 GMT time tick. What is the chronometer error?

- (A) +3s
- (B) -3s
- (C) 03h 00m 02s fast
- (D) 02s fast

If choice D is selected set score to 1.

43. After an item of required safety equipment on a towing vessel fails, the owner or Master must consider all of these factors before continuing the voyage, EXCEPT the _____.

- (A) estimated time of arrival promised to the customer
- (B) dictates of good seamanship
- (C) weather conditions, including visibility
- (D) safety of the vessel, considering the other traffic in the area

If choice A is selected set score to 1.

44. You are steaming along the coast of Ireland in the Irish Sea. You sight a lighted buoy with a white flashing light showing a group of two flashes. The buoy indicates you should take which action?

- (A) You must pass north of the buoy
- (B) You must pass south of the buoy
- (C) You should pass well clear on either side of the buoy
- (D) You must pass the buoy close to starboard

If choice C is selected set score to 1.

45. Where are buoys and day beacons exhibiting a yellow triangle or square painted on them used?

- (A) In minor harbors where the controlling depth is 10 feet (3 meters) or less
- (B) Only at particularly hazardous turns of the channel
- (C) On isolated stretches of the ICW to mark undredged areas
- (D) Locations where the ICW and other waterways coincide

If choice D is selected set score to 1.

46. A ship is in longitude 54°00'W on a true course of 270°. The ship's clocks are on the proper time zone. At what longitude should the clocks be changed to maintain the proper zonetime?

- (A) 45°00'W
- (B) 52°30'W
- (C) 60°00'W
- (D) 67°30'W

If choice D is selected set score to 1.

47. A current perpendicular to a vessel's track has the greatest effect on the vessel's course made good _____.

- (A) in deep water
- (B) at high vessel speeds
- (C) in shallow water
- (D) at low vessel speeds

If choice D is selected set score to 1.

48. Which term is given to a light that has a light period shorter than its dark period?

- (A) Pulsating
- (B) Flashing
- (C) Occulting
- (D) Alternating

If choice B is selected set score to 1.

49. When utilizing a Pacific Coast chart, which is the reference plane of soundings?

- (A) Lowest normal low water
- (B) Mean low water springs
- (C) Mean lower low water
- (D) Mean lowest water

If choice C is selected set score to 1.

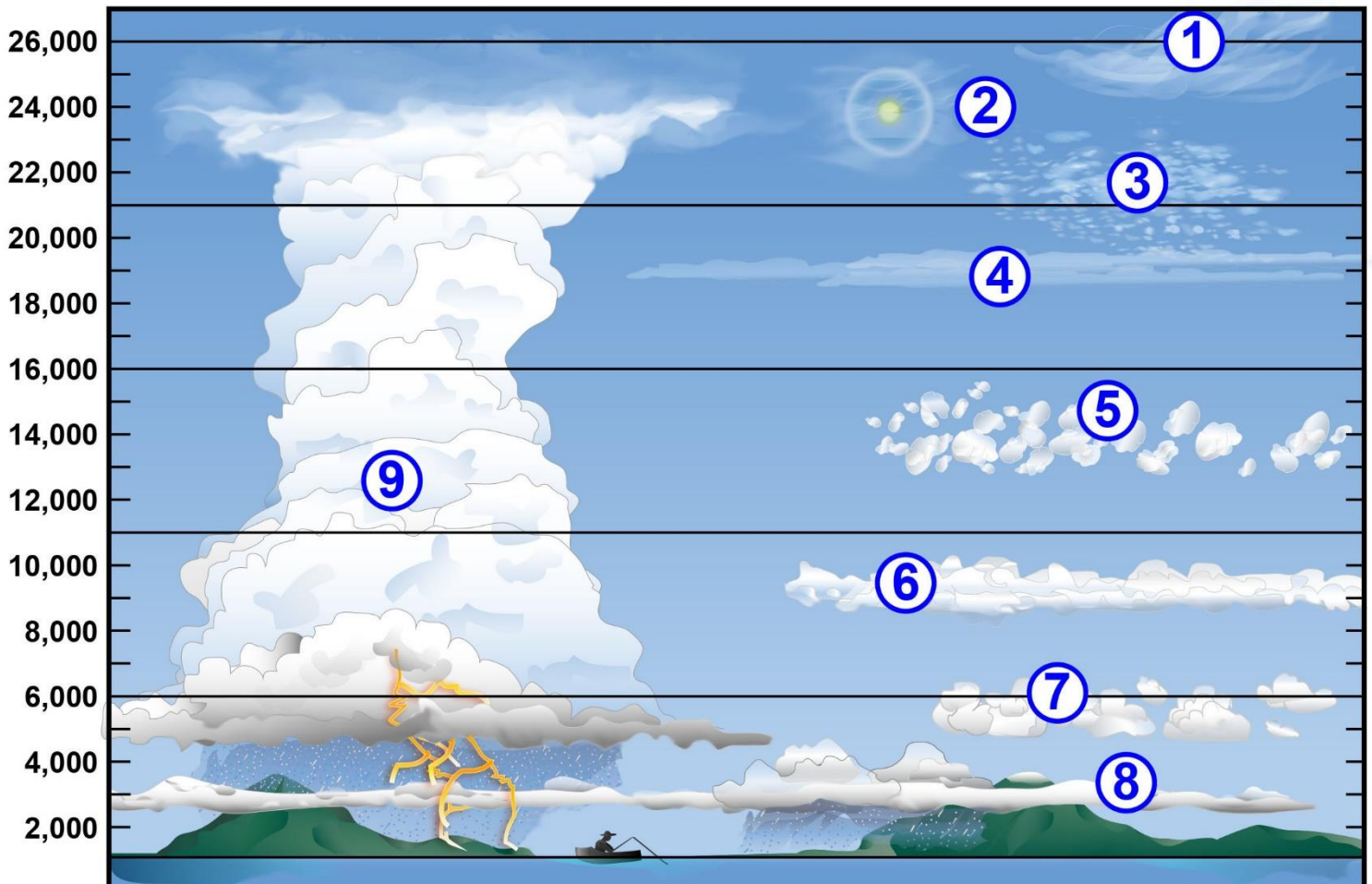
50. The Light List shows that a navigational light has a nominal range of 19 miles and a height above water of 52 feet (15.8 meters). Your height of eye is 42 feet (12.8 meters) and the visibility is 10.0 miles. At what approximate range will you first sight the light?

- (A) 16.0 miles
- (B) 10.0 miles
- (C) 19.0 miles
- (D) 17.3 miles

If choice A is selected set score to 1.

D039NG

Altitude (in feet)



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Keep 'em Safe, Keep 'em Sailing



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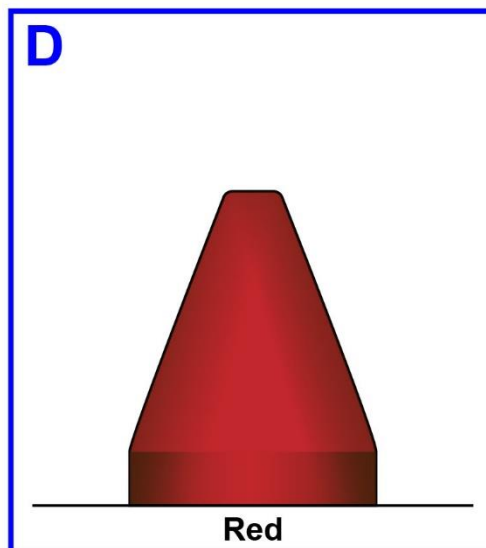
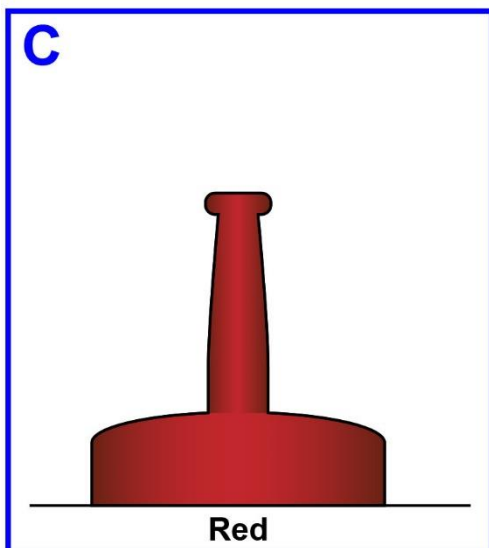
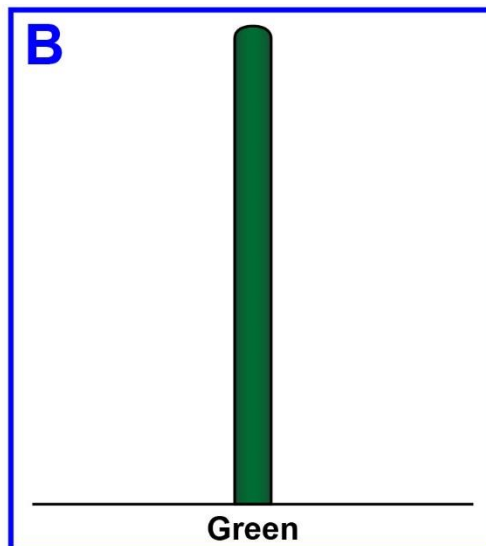
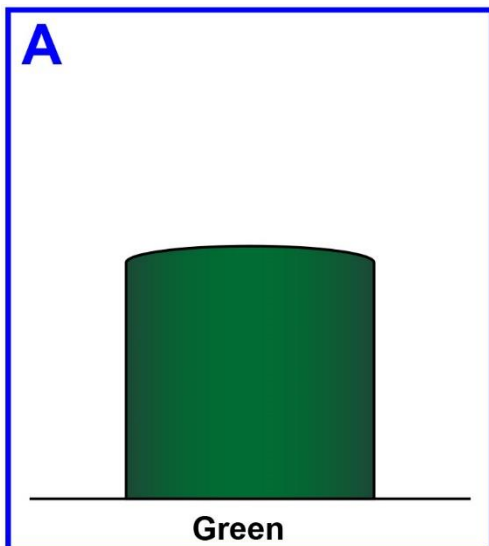
NO.		SHIP NAME	DATE SENT (UTC)	TIME SENT (UTC)	STA. CALLED	FREQUENCY
ADDRESSES						
U.S. Coast Guard: No address needed, start with BBXX indicator and ship's call sign.						
INMARSAT						
Standard A: Select—Coast Earth Station (CES), routine priority, duplex telex channel, and initiate call. When GA + is received, select 41 +. Upon receipt of answerback, NWS OBS MHTS, send the weather report starting with the BBXX indicator and ship's call sign. End the report with 5 periods. Try to limit INMARSAT call time to 30 seconds.						
Standard C: To establish special access code 41, see manufacturers recommended instructions for set-up, or the Mariners Weather Log Summer, 1994, or later editions.						
U.S. commercial and foreign radio stations: To: OBS METEO _____ (get address from "Radio Stations Accepting. . . ."). Start with BBXX indicator and ship's call sign and combine the remaining numbers into 10-character groups.						
INDICATOR	CALL SIGN	YYGG _i w	99L _a L _a L _a	Q _c L _o L _o L _o L _o	i _R i _x hVV	Nddff
BBXX			99		4	
00fff	1s _n TTT	2s _n T _d T _d T _d	4PPPP	5appp	7wwW ₁ W ₂	8N _h C _L C _M C _H
222D _s v _s	0s _t T _w T _w T _w	2P _w P _w H _w H _w	3d _{w1} d _{w1} d _{w2} d _{w2}	4P _{w1} P _{w1} H _{w1} H _{w1}	5P _{w2} P _{w2} H _{w2} H _{w2}	6I _s E _s E _s R _s
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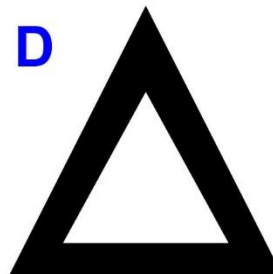
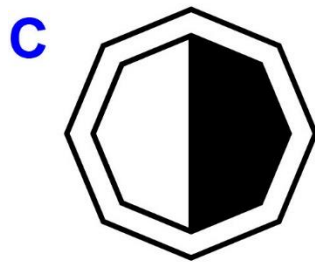
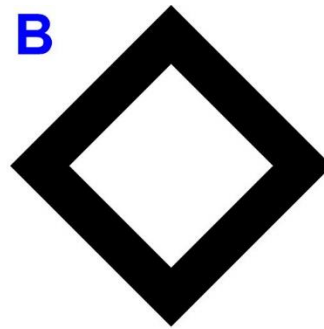
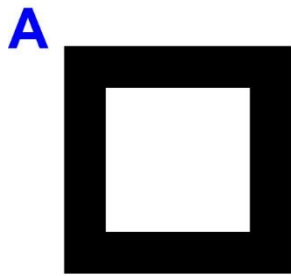
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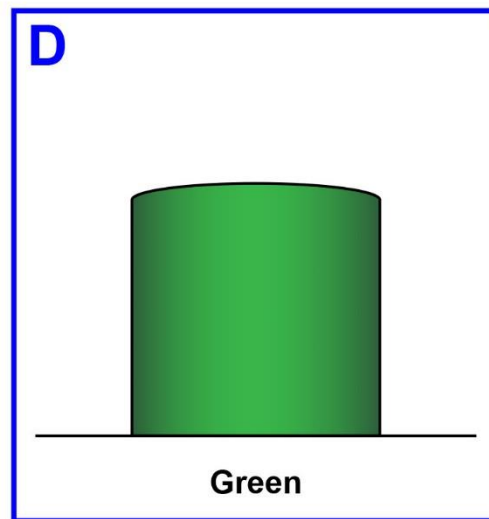
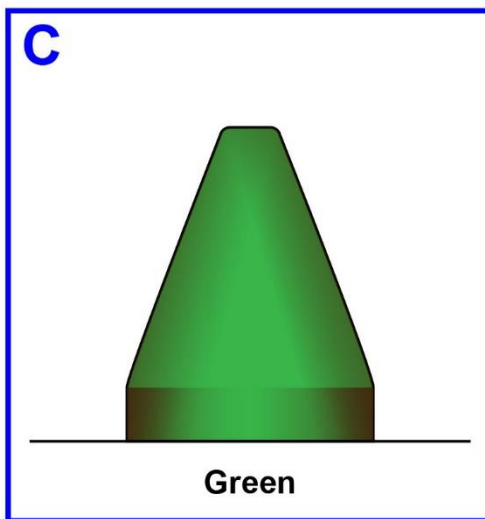
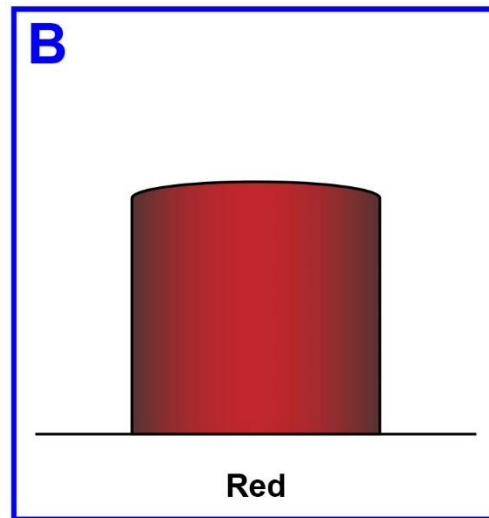
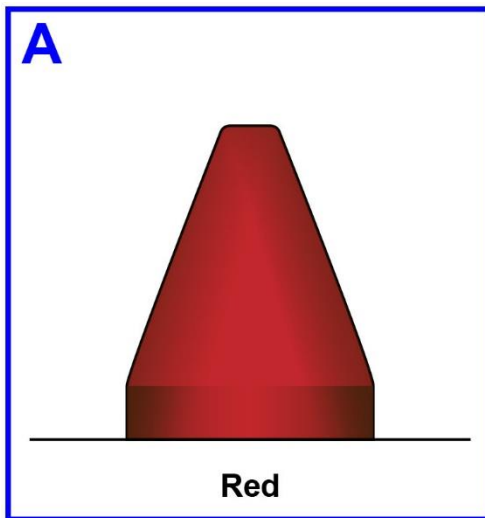


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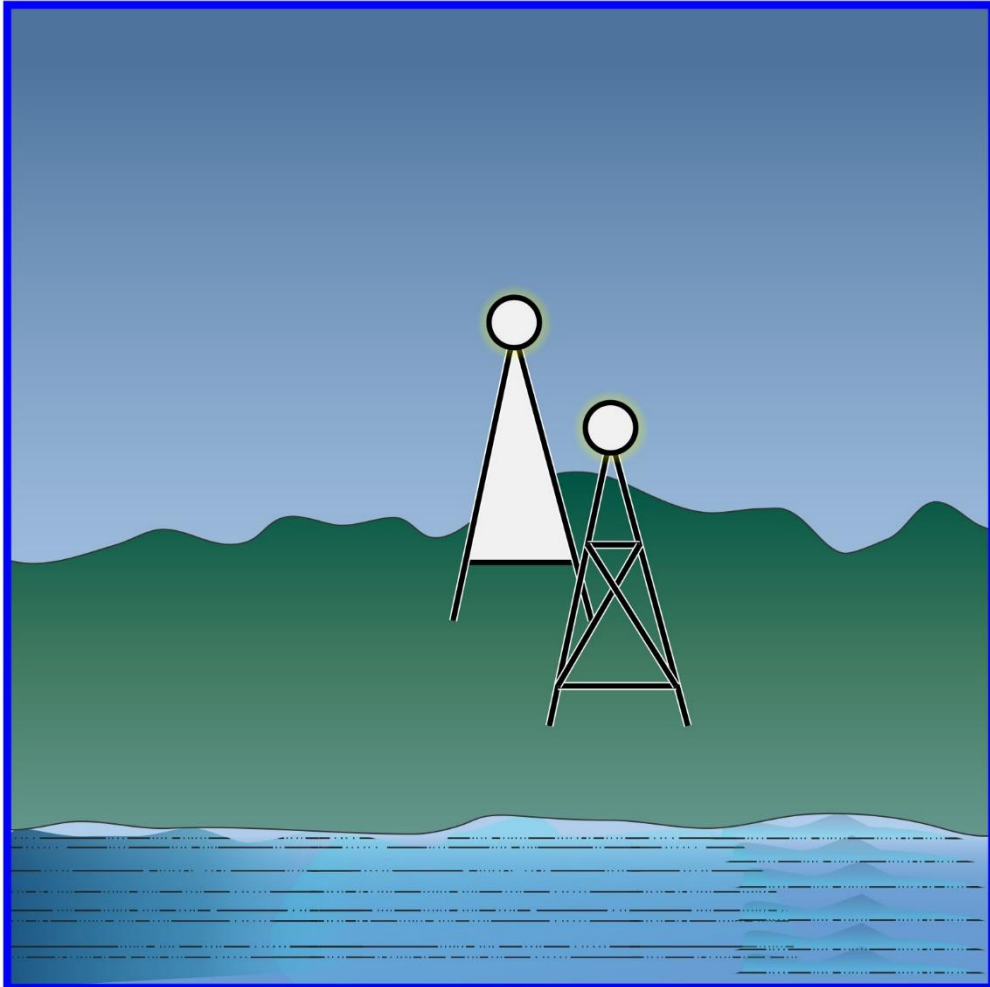
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