

Knowledge Review

Chapter 1

1. True or False. An object is neutrally buoyant when it displaces an amount of water less than its own weight. _____
2. Explain why buoyancy control, both on the surface and underwater, is one of the most important skills you can master:
On the surface: _____
Underwater: _____
3. Fill in the blanks with the appropriate words: freshwater or saltwater.
“The same object would be more buoyant in _____ than it would be in _____.”
4. True or False. Because water is denser than air, the pressure change for a given distance ascent or descent is significantly greater in water than in air. _____
5. Complete the following chart for a sealed flexible bag, full of air at the surface.

| Depth | Pressure | Air Volume | Air Density |
|-----------|-----------|------------|-------------|
| 0m/0ft | 1 bar/ata | 1 | x 1 |
| 10m/33ft | | 1/2 | |
| 30m/99ft | | 1/4 | |
| 40m/132ft | 5 bar/ata | | x 5 |

6. Circle the letter of the best definition for a squeeze.
 - a. A condition that causes pain and discomfort when the pressure outside an air space of your body is less than the pressure inside an air space.
 - b. A condition that causes pain and discomfort when the pressure inside an air space of your body is less than the pressure outside an air space.
7. Check each statement that describes a technique used to equalize air spaces during descent:
 - a. Block your nose and attempt to gently blow through it.
 - b. Swallow and wiggle the jaw from side to side.
 - c. Block your nose and attempt to gently blow through it while swallowing and wiggling the jaw from side to side.

8. State how often you should equalize your air spaces during descent.

9. True or False. "If you feel discomfort in your ears while descending, continue downward until the discomfort is gone." _____

10. State the most important rule in scuba diving.

11. Circle the letter of the best definition for a reverse block.

- a. A condition that occurs when expanding air cannot escape from a body air space during ascent, causing pain and discomfort.
- b. A condition that occurs when expanding air escapes from a body air space during ascent, causing pain and discomfort.

12. Describe what action you should take if you feel discomfort during ascent due to air expansion, whether in your ears, sinuses, stomach, intestines or teeth.

13. When scuba diving, why must your nose be enclosed in the mask?

14. Explain the best way to prevent water from entering your scuba tank.

15. Circle the appropriate answer. The most important feature for consideration when purchasing a regulator is:

- a. The color
- b. The number of hoses it has
- c. Ease of breathing
- d. Size

Student Diver Statement: I've completed this Knowledge Review to the best of my ability, and any questions I answered incorrectly or incompletely I've had explained to me, and I understand what I missed.

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Chapter 2

1. Check one. "Underwater, objects appear _____ by 33 percent, making them seem _____ and/or _____."
 a. minimized, smaller, further away b. magnified, larger, closer
2. Check one. "Since it travels about four times faster in water than in air, you will have difficulty determining the origin of _____ underwater."
 a. light b. sound
3. Fill in the blank with the appropriate word: faster or slower.
"Water conducts heat away from your body _____ than air does."
4. Describe what you should do if you begin shivering continuously underwater.

5. Of the procedures you can follow to compensate for the increased resistance of water while diving, check those listed here:
 a. Streamline yourself and your equipment.
 b. Avoid rapid jerky movements.
 c. Move slowly and steadily.
 d. Pace yourself.
6. Check the statement that best describes the proper breathing pattern for diving.
 a. Consistently rapid and shallow.
 b. Consistently slow and deep.
7. It is easy to prevent overexertion while diving. Check the proper preventative measures listed here.
 a. Move slowly and avoid extended strenuous activity.
 b. Use your arms rather than your legs for propulsion underwater.
 c. Know your physical limits.
8. Explain what to do if you become overexerted while diving.
a. Underwater:

b. At the surface:

9. Check each statement that describes a technique used for airway control:
- a. Use your tongue as a splash guard by placing the tip on the roof of your mouth.
 - b. Inhale slowly.
 - c. Avoid rapid, jerky movement.
 - d. Inhale cautiously.

10. Explain why it is important not to wear a tight-fitting hood.

11. Check the appropriate answer. The most important feature of any weight system is:

- a. the size and shape of the weights.
- b. the ease of adjustment.
- c. a quick-release mechanism.

12. Check one. An alternate air source should be _____, so it can be quickly and easily identified by a diver needing the device.

- a. tucked under the weight belt
- b. conspicuously marked

13. Describe where you should attach an alternate air source to your body.

14. True or False: A diving knife is used as a tool (to measure, pry, dig, cut and pound), but is not intended to be, nor should be, used as a weapon. _____

15. Identify the meaning of the standard hand signal illustrated here.

- a. OK? OK
- b. Distress, help
- c. Out-of-air



16. Explain how to check for proper weighting.

17. List and describe the steps of the pre-dive safety check, and explain when you should use the check.

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Chapter 3

1. There are several factors that affect visibility underwater. Check those listed here.
 - a. weather
 - b. water movement
 - c. ambient pressure
 - d. suspended particles
2. True or False: To avoid problems associated with diving in clear water, use an accurate depth gauge, refer to it frequently and it is recommend that you use a line for ascents and descents. _____
3. Explain what you should do if you find yourself caught in a current at the surface.

4. True or False: You will find it easier to swim against a mild current along the bottom where it is generally weaker than on the surface. _____
5. Check one. If a current is present, you should generally begin your dive:
 - a. with the current.
 - b. across the current.
 - c. against the current.
6. Check one. Nearly all injuries from aquatic life are caused by _____ action on the part of the animal.
 - a. unpredictable
 - b. unprovoked
 - c. defensive
7. Describe what you should do if you spot an aggressive animal underwater.

8. True or False: For safety and enjoyment when diving in a new area or engaging in a new activity, be sure to obtain a proper orientation. _____

9. A rip current can be recognized as a line of turbid, foamy water moving:
- a. toward shore.
 - b. seaward.
 - c. parallel to shore.
10. Outline three ways to prevent or control most diving problems that occur at the surface.
1. _____
 2. _____
 3. _____
11. True or False: The *first step* in assisting another diver with a problem at the surface is to talk to him, offering encouragement and persuading him to relax. _____
12. Arrange the five low-on-air/out-of-air emergency procedures in order of priority from 1 through 5.
- Buoyant emergency ascent
 - Controlled emergency swimming ascent
 - Normal ascent
 - Buddy breathing ascent
 - Alternate air source ascent
13. Check one. If you become entangled underwater, you should:
- a. Twist and turn to free yourself.
 - b. Stop, think and then work slowly and calmly to free yourself.
14. True or False: With an unconscious diver, the primary concern is to remove him from the water. _____
15. True or False: Once removed from the water, an unconscious breathing diver should be administered oxygen if available.

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Knowledge Review

Chapter 4

1. A detailed log book is the proof-of-experience documentation typically requested in many dive situations. Check those listed here.

- a. for additional diver training
- b. by dive stores when buying dive equipment
- c. when diving at resorts or on boats

2. Explain how to prevent problems with contaminated air.

3. State the two ways divers prevent problems with oxygen.

- a. _____
- b. _____

4. Check each symptom related to nitrogen narcosis:

- a. impaired coordination
- b. foolish behavior
- c. joint and limb pain

5. Check one. To prevent nitrogen narcosis:

- a. skip breathe.
- b. equalize your air spaces early and often.
- c. avoid deep dives.

6. Check each symptom which may be related to decompression sickness:

- a. foolish behavior
- b. moderate tingling
- c. cherry-red lips
- d. weakness and prolonged fatigue

7. Outline the first aid procedure for assisting someone with decompression illness.

8. True or False. When using either version of the Recreational Dive Planner, you must ascend at a rate that does not exceed 18 metres/60 feet per minute. _____
9. Match the following by placing the correct letter in the blank.
- _____ Maximum depth limit for Open Water Divers
- _____ Maximum depth limit for divers with training and experience beyond the Open Water Diver level
- _____ Maximum depth limit for divers with Deep Diver training
- a. 18 m/60 ft b. 40 m/130 ft c. 30 m/100 ft
10. According to the Recreational Dive Planner, the no-decompression limit for 18 metres/60 feet is _____ minutes.
11. What is your pressure group after a dive to 12 metres/42 feet for 24 minutes?
_____ Pressure Group
12. After a dive, you are in pressure group *K*. What will your new pressure group be after a 34-minute surface interval?
_____ Pressure Group
13. A diver in Pressure Group *G* plans a dive to 17 metres/56 feet. What is the maximum allowable bottom time according to the Recreational Dive Planner?
_____ Maximum Allowable Bottom Time
14. Indicate the final pressure group upon surfacing after the following series of dives.
First dive: 16 metres/50 feet/23 min.; surface interval: 1:30.
Second dive: 10 metres/35 feet/46 min.
Final Pressure Group = _____
15. Indicate the final pressure group upon surfacing after the following series of dives.
First dive: 18 metres/60 feet/15 min.; surface interval: 1:00.
Second dive: 12 metres/40 feet/30 min.
Final Pressure Group = _____

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Chapter 5

(Answer all questions, regardless of which Recreational Dive Planner you are using — The Wheel or table version.)

- Describe the three required situations in which a safety stop should be made.
 - _____
 - _____
 - _____
- Check one. If you accidentally exceed a no-decompression limit or an adjusted no-decompression limit by no more than 5 minutes, you should slowly ascend at a rate not faster than 18 metres/60 feet per minute to 5 metres/15 feet and remain there for _____ minutes prior to surfacing. After reaching the surface, do not dive for at least _____ hours.
 a. 8 minutes, 6 hours b. 15 minutes, 24 hours
- State the altitude (metres/feet) above which the Recreational Dive Planners should not be used unless special procedures are followed.
_____ metres/feet
- True or False: To reasonably assure you remain symptom free from decompression sickness when flying in a commercial jet airliner after diving, wait 12 hours. _____
- Explain the procedure you must follow when planning a dive in cold water or under strenuous conditions using the Recreational Dive Planner.

- What is the minimum surface interval required between a dive to 18 metres/60 feet for 40 minutes followed by a dive to 14 metres/50 feet for 60 minutes?
Minimum Surface Interval = _____

7. What is the minimum surface interval required between a dive to 20 metres/70 feet for 29 minutes followed by a dive to 14 metres/50 feet for 39 minutes?

Minimum Surface Interval = _____

8. With reference to the compass heading shown in Figure 1, select the figure letter that indicates a reciprocal heading.



Reciprocal heading is shown by figure letter: _____

9. What's the purpose of the PADI System of continuing education?

10. What are the benefits of PADI Adventure Dives and the Advanced Open Water program?

11. State the purpose of a PADI Discover Local Diving experience.

12. When should you consider taking a PADI Scuba Review course?

13. What's the relationship between Adventure Dives, Advanced Open Water Diver course dives and Specialty Diver courses?

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