

Name _____ Period _____ Date _____

Gas Laws and SCUBA Diving

Read the accompanying article “Gas Laws & SCUBA Diving,” *ChemMatters*, February 1983, pp. 4-6. Answer the following questions completely.

1. Why does diving 30m below sea level affect our bodies more than being in a building 30m above sea level?
2. What parts of a diver’s body are most affected by pressure changes?
3. State Boyle’s Law.
4. Why don’t SCUBA diver’s lungs collapse as they descend?
5. What would happen to a diver who does not exhale while surfacing from a 30 m dive? Explain in terms of Boyle’s Law.
6. State Henry’s Law.
7. What gas is associated with causing bubbles in the blood and other body fluids? _____
8. What is another name for decompression sickness? _____
9. Describe how increased pressure in the chamber relieves symptoms of decompression sickness.
10. What is nitrogen narcosis?
11. Which gas law explains why air contaminants (like trace amounts of CO) are more dangerous when the total air pressure is higher? Explain.
12. Is the relationship between the temperature of water and the solubility of a gas in it a direct or inverse relationship? Explain.
13. Use your answer to #11 to explain why it is dangerous for a diver to take a hot shower after a deep dive.