

Directions: Match the term in Column 1 with the definition in Column 2. Write the letter of the correct definition in the blank at the left.

Column 1	Column 2
_____ 1. Kinetic theory of matter	A. Water vapor
_____ 2. Plasma	B. State of matter with no definite shape but with definite volume
_____ 3. Crystals	C. Explains how airplanes fly
_____ 4. Archimedes' principle	D. Solid which is not made of crystals
_____ 5. Buoyant force	E. State of matter that has no definite shape and no definite volume
_____ 6. Solid	F. Determines whether an object will sink or float in a fluid
_____ 7. Amorphous solid	G. Matter expands when it gets hotter and contracts when it cools
_____ 8. Bernoulli's principle	H. State of matter with definite shape and definite volume
_____ 9. Steam	I. Water in the solid state
_____ 10. Thermal expansion	J. Explains the buoyant force on an object submerged in fluid
_____ 11. Pascal's principle	K. Tiny particles in motion make up all matter
_____ 12. Liquid	L. Particles arranged in repeating geometric patterns
_____ 13. Gas	M. Gaslike mixture of charged particles
_____ 14. Ice	N. Pressure applied to a fluid is transmitted throughout the fluid

True/False: Determine whether the *italicized* term makes each statement true or false. If the statement is true, write true in the blank. If the statement is false, write in the blank the term that make the statement true.

_____ 15. A fluid is a liquid or a *solid*.

_____ 16. Buoyancy is the ability of a fluid to exert a *downward* force on an object immersed in it.

_____ 17. If the buoyant force on an object is *greater than* the weight of the object, the object will sink.

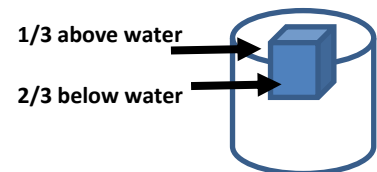
- _____ 18. The buoyant force on an object in a fluid is equal to the weight of the fluid displaced by the object.
- _____ 19. Archimedes' principle states that pressure applied to a fluid is transmitted unchanged throughout the fluid.
- _____ 20. As the velocity of a fluid increases the pressure exerted by the fluid increases.
- _____ 21. Temperature and viscosity are inversely related; that is, higher temperatures means lower viscosity.
- _____ 22. The SI unit for force is the pascal.
- _____ 23. Faster moving particles in a liquid have a higher temperature.

Short Answer: Answer the following questions on the lines provided.

24. A hydraulic machine can be used to lift extremely heavy objects.
Why is the fluid in the hydraulic machine liquid rather than a gas?
Hint: Look at the diagram on the right.



25. A block of wood is floating in water. The weight of the part of the block above water is one-third of the total weight of the block. What is the weight of the water displaced by the block of wood?
Explain in terms of Archimedes' Principle.



26. A passenger jet in the air increases its speed. Does the downward force of air on the top of the wings increase or decrease? Does the net lifting force of the air on the wings increase or decrease?
Explain your answer.

27. Which of the three blocks (solid, hollow or foam) has the greatest buoyant force pushing on it?
Use Archimedes' Principle to explain.

