NAME_____   PHYSICS PRESSURE practic2
USE YOUR OWN NOTES AND WORKSHEETS

1) Normal atmospheric pressure is enough to lift a column of gasoline _____ a column of mercury
                    A) higher than B) lower than   C) same height as

2) The buoyant force acting upon an object submerged in a fluid does not depend on
                    A) The weight of the object   B) The weight of the displaced fluid
                    C) The volume of the object   D) The volume of the displaced fluid

3) For which water-filled container is the pressure greatest at the point marked X?
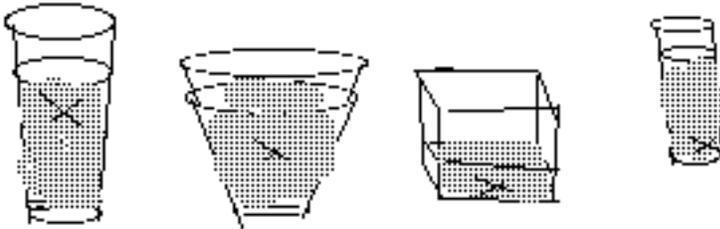
A   B   C   D

4) A municipal water supply is provided by a tall water tower. Water from this tower flows to a building. How does the water flow out of a faucet on the ground floor of a building compare with the water flow out of an identical faucet on the second floor of the building?
a) Water flows more rapidly out of the ground-floor faucet.
b) Water flows more rapidly out of the second-floor faucet.
c) Water flows at the same speed out of both faucets.
d) The speed of the water flow cannot be determined unless the height of the water tower is known.

5) Which factor will NOT increase the lift on a moving airplane wing?
A) Increasing the surface area
B) Increasing the curve of the wing
C) Increasing the velocity
D) Increasing the weight

6) Which is true about an airplane?
A) Increasing the angle of attack decreases the drag
B) Increasing the velocity decreases the pressure difference between the top and bottom of the wing.
C) Increasing the thrust decreases the lift
D) Increasing the weight decreases the thrust

7) Which of the following statements about floating objects is correct?
a) The object's density is greater than the density of the fluid on which it floats.
b) The object's density is equal to the density of the fluid on which it floats.
c) The displaced volume of fluid is greater than the volume of the object.
d) The buoyant force equals the object's weight.
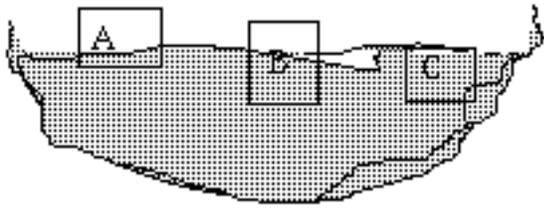
8) Which block weighs the most?

        A)   B)   C)   D) all weigh the same

9) On which block is the buoyant force equal to the weight of the block?

        A)   B)   C)   D) All three

10) For which block is the density equal to that of water?

        A)   B)   C)   D) All three

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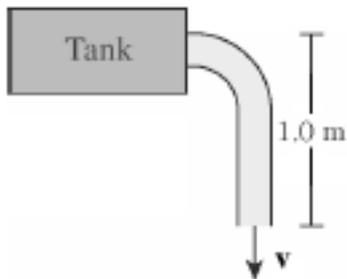
11)`

Gasoline is siphoned from a car tank, as shown in the figure above. The atmospheric pressure is the same at either end, and the height difference from the top of the tank to the bottom of the siphon is 1.0 m. Utilize Bernoulli's equation to determine the velocity of flow of gasoline out of the tube.

a) 1.1 m/s   b) 2.2 m/s   c) 4.4 m/s   d) 8.8 m/s

12) Each tire of an automobile has an area of 0.026 m^2 in contact with the ground. The weight of the automobile is $2.6 * 10^4$ Newtons. What is the pressure in the tires?

        a) $3.1 * 10^6$ Pa b) $6.5 * 10^3$ Pa c) $2.5 * 10^5$ Pa d) $1.0 * 10^6$ Pa

13) A table-tennis ball has an average density of 0.084 g/cm^3 and a diameter of 3.8 cm. (Vol = 4/3*pi*r^3)What force can submerge the ball in water? (Dw = 1.00 g/cm^3)

        a) 1.0 N b) 0.79 N c) 0.52 N d) 0.26 N

14) Explain how Bernoulli's principle can be thought of as restating conservation of energy

15-16) How much faster does the air on top of a 100 kg glider that has a surface area of 10 meters squared have to move in order to lift it?
Show work

17-18) A block of aluminum metal and a block of denser lead of unknown volume are both submerged in water, and on a scale, found to have an apparent weight of one ton. Which has the greater mass? explain your answer...