

Fluids Review Homework 1

⚠ This is a preview of the draft version of the quiz

Started: Nov 4 at 9:25am

Quiz Instructions

Question 1

1 pts

A dam holds water in a lake that extends 2000 meters east of the dam. If it extended 3000 east instead of 2000 m, the pressure at the base of the dam would _____.

- increase
- remain the same
- decrease
- impossible to determine

Question 2

1 pts

A horizontal 6 cm diameter pipe tapers to a 2 cm nozzle. If the water emerges from the nozzle at 30 m/s, what is the velocity in the 6 cm diameter section of the pipe?

Round to the second decimal place.

Question 3

1 pts

A horizontal 6 cm diameter pipe tapers to a 2 cm nozzle. If the water emerges from the nozzle at 30 m/s, what is the pressure in the 6 cm diameter section of the pipe?

Assume the pressure on the exiting fluid is 100,000 Pa

The density of water is 1000 kg/m³, and 1000 L = 1 m³.

Question 4

1 pts

A pirate ship hides out in a small inshore lake. It carries 30 ill-gotten treasure chests in its hold. The lookout spies a gunboat on the horizon. To get away, the pirate captain orders the heavy treasure chests to be thrown overboard. The chests sink to the bottom of the lake. What happens to the water level of the lake?

- The water level drops
- Impossible to determine

- The water level stays the same
-
- The water level rises

Question 5**1 pts**

Anika saves 4 liter soda bottles so that she can construct a raft and float out onto Lake Pleasant. If Anika has a mass of 40 kg, what minimum number of bottles is necessary to support her? The density of water is 1000 kg/m^3 , and $1000 \text{ L} = 1 \text{ m}^3$.

Question 6**1 pts**

Three plastic blocks of different mass and volumes float with weights on top of them.

Block A has total mass 64 g and volume 8 cm^3 .

Block B has total mass 54 g and volume 6 cm^3 .

Block C has total mass 10 g and volume 1 cm^3 .

Which has the largest buoyant force?

-
- A
-

C B**Question 7****1 pts**

Three plastic blocks of different mass and volumes float with weights on top of them.

Block A has total mass 64 g and volume 8 cm^3 .

Block B has total mass 54 g and volume 6 cm^3 .

Block C has total mass 10 g and volume 1 cm^3 .

Which has the 2nd largest buoyant force?

 A B C**Question 8****1 pts**

Three plastic blocks of different mass and volumes float with weights on top of them.

Block A has total mass 64 g and volume 8 cm^3 .

Block B has total mass 54 g and volume 6 cm³.

Block C has total mass 10 g and volume 1 cm³.

Which has the smallest buoyant force?

B

C

A

Question 9

1 pts

A suction cup is used to hang a sign from the ceiling. Which of the following statements is correct. The weight of the suction cup and sign must be _____ than the force from the air upward on the suction cup.

less (or the same)

greater

Question 10

1 pts

Pressure is a force.

True

False

Not saved

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