Fluids Worksheet Number One. This worksheet is about incompressible static fluids.

1. What is the absolute pressure 20.0m below the surface of a lake on Earth?

2. What is the gauge pressure 20.0m below the surface of a lake on Earth?

3. What is the buoyant force on a rock with a volume of 2.00x10-4m3, completely submerged in water?

4. What is the buoyant force acting upon a rock with a mass of 500.0g and a density of 2500kg/m3 completely submerged in water?

5. What is the buoyant force on a rock with a mass of 500.0g and a specific gravity of 2.5 completely submerged in water.

6. A ***cube*** of wood has a density of 740.0kg/m3 and a volume of 1.00m3. Assuming the cube maintains an orientation with its top face parallel to the surface of the water, find the distance X, below the surface at equilibrium.

X

7. If the fluid in 6 were oil with ρ=850kg/m3, instead of water would X be greater, smaller or the same?

8. A ball has a specific gravity of 0.650. The ball is pulled beneath the surface of a swimming pool until its top is 3.00m below the surface. The ball is then released. How much time passes before the ball just breaches the surface?

9. A ball floats in a pool of water. At rest 70.0% of the ball is above the surface.

A. Find the ball’s specific gravity.

B. If the mass of the ball is 125g, find its radius.

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