

8 Density and pressure – Part 1 —Answers

Answers

Work through these after you have tried the questions yourself.

$$\mathbf{2.1} \quad \rho = \frac{m}{V} = \frac{3.0}{0.0015} = 2000 \text{ kg/m}^3.$$

$$\mathbf{2.2} \quad P = \frac{F}{A} = \frac{80}{0.020} = 4000 \text{ Pa}.$$

2.3 it sinks –its density (1200) is greater than water’s (1000), so it is heavier than the water it would displace.

$$\mathbf{2.4} \quad \rho gh = 1000 \times 9.8 \times 5.0 = 4.9 \times 10^4 \text{ Pa}.$$

2.5 pressure depends only on depth ($P = P_0 + \rho gh$), not on how wide the container is, so the same depth gives the same pressure everywhere.