8 Density and pressure – Part 1 — Answers

Answers

Work through these after you have tried the questions yourself.

2.1 $\rho = \dfrac{m}{V} = \dfrac{3.0}{0.0015} = 2000$ kg/m^3.
2.2 $P = \dfrac{F}{A} = \dfrac{80}{0.020} = 4000$ Pa.
2.3 it sinks – its density (1200) is greater than water's (1000), so it is heavier than the water it would displace.
2.4 $\rho g h = 1000 \times 9.8 \times 5.0 = 4.9 \times 10^4$ Pa.
2.5 pressure depends only on depth ($P = P_0 + \rho g h$), not on how wide the container is, so the same depth gives the same pressure everywhere.