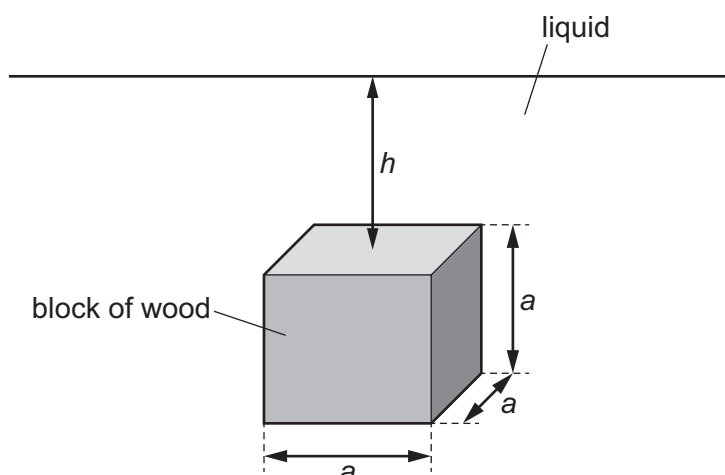


- 15** A block of wood of density ρ_w has sides of length a .

The block is immersed in a liquid of density ρ_L . The top surface of the block is at a depth h below the surface of the liquid.



The acceleration of free fall is g .

What is the upthrust acting on the block from the liquid?

- A** $\rho_L a^3 g$ **B** $\rho_w a^3 g$ **C** $\rho_L h g$ **D** $\rho_L a g$
- 16** A technical article about diesel engines expresses the energy available from diesel fuel both as 41.8 MJ kg^{-1} and as 34.9 GJ m^{-3} .
- What is the density of diesel fuel?
- A** $8.35 \times 10^2 \text{ kg m}^{-3}$
B $1.20 \times 10^3 \text{ kg m}^{-3}$
C $8.35 \times 10^5 \text{ kg m}^{-3}$
D $1.20 \times 10^6 \text{ kg m}^{-3}$
- 17** What is meant by the efficiency of a system?
- A** the difference between the useful energy output from the system and the total energy input
B the difference between the useful energy output from the system and the wasted energy output
C the ratio of the useful energy output from the system to the total energy input
D the ratio of the useful energy output from the system to the wasted energy output