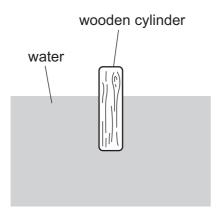
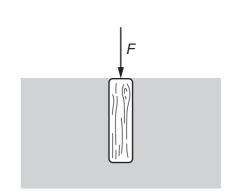
15 A wooden cylinder floats partially submerged in a bath of water. A force F is applied to the cylinder until it is just fully submerged.





Which statement is **not** correct?

- Some of the water gains gravitational potential energy.
- В The cylinder loses gravitational potential energy.
- C Work is done by force *F* on the cylinder.
- Work is done by the upthrust on the cylinder.
- 16 A system has a useful power output of 4.0 W and a wasted power of 16 W.

What is the efficiency of the system?

- **A** 5.0%
- 20%
- 25%
- 80%
- 17 A parachutist is falling towards the ground at a constant speed v. The rate at which she is losing gravitational potential energy is R.

The acceleration of free fall is g.

What is the mass of the parachutist?

- 18 A copper wire of diameter 1.6 mm is stretched within its limit of proportionality by a tensile force of 430 N.

The Young modulus of copper is 130 GPa.

What is the strain in the wire?

- **A**  $4.1 \times 10^{-4}$

- **B**  $1.3 \times 10^{-3}$  **C**  $1.6 \times 10^{-3}$  **D**  $5.2 \times 10^{-3}$